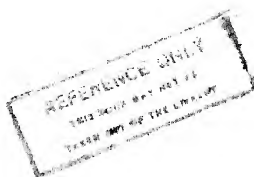


Obtaining Better Value from Further Education

A Report by the Audit Commission

June 1985



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Summary

Last year, the Commission's auditors examined in detail the way resources are being used in 165 out of 550 polytechnics and colleges of further education.

The local projects identified value improvement opportunities worth over £50 million a year, over £300,000 per college. These are being followed up at the local level. The scale of the value improvement potential suggests that similar projects should be carried out in the 385 colleges that were not examined by auditors.

The main improvement opportunities are in the following areas:

- (i) Better marketing of further education courses. At a time when unemployment among 16-19 year olds averages over 16%, it is disturbing that average class sizes for non academic courses are more often than not relatively low in areas of highest youth unemployment. If additional demand for existing courses could be generated, the full time equivalent of some 75,000 additional students could be provided with further education without overstraining existing teaching resources. This additional demand can be generated from:
 - improving links with local schools and employers;
 - monitoring attendance and retention rates closely and following up students discontinuing courses;
 - making college facilities available for up to 48 weeks a year.
- (ii) Tailoring teaching resources more closely to demand. The existing agreements governing the way teachers are employed give local education authorities wide latitude to decide grading, the mix of staff and the amount of time they spend in front of classes. Within the existing agreements, the difference between the highest and lowest cost to teach the same workload is over 30%. Better value is obtained by:
 - aiming for an overall student/staff ratio of at least 11.2:1, and eventually 12:1;
 - ensuring that actual class contact hours for lecturers are within the nationally agreed ranges;
 - avoiding over-grading of staff: at present the higher a lecturer's grade, the less time can be spent in class contact;
 - controlling lecturers' out-of-class time, in particular limiting remission from agreed class contact hours to 4%;
 - avoiding over-teaching: courses involving over 24 class hours a week need careful review.
- (iii) Better cost recovery. Prompt billing of fees to students and the Manpower Services Commission, reimbursement of expenses incurred by lecturers carrying out externally financed research, tight control over library books, and avoidance of losses on catering operations should be common practice. In many cases, however, they are not.
- (iv) Tight control over non-teaching costs. In many colleges, there are opportunities to improve space utilisation, reduce cleaning and

energy costs and to tighten purchasing arrangements.

Progress in implementing the changes arising from the projects carried out last year is being monitored regularly. Many colleges have found that it is possible to avoid any forced redundancies, because natural turnover among lecturers averages around 5% a year.

Negotiations over lecturers' terms and conditions should provide the opportunity for agreeing changes in current working practices which are not conducive to value for money. The reduction in class contact as seniority increases, the lack of minimum class contact hours, teaching years of 33 weeks or less, and timetabling arrangements which permit lecturers to claim overtime payments even though they have not met their contractual hours for the year as a whole, are all aspects of the present arrangements requiring attention.

Glossary

The following abbreviations are used in this report:

AAHB	– Academic/administrative hours balance
AACB	– Academic/administrative cost balance
ACS	– Average class size
AFE	– Advanced further education
ALH	– Average lecturer hours in front of classes per week
ASH	– Average student hours in class per week
CFE	– Colleges of Further Education, classified as major, intermediate and minor
FEMIS	– Further Education Management Information System (produced by the Further Education Staff College)
FTE	– Full-time equivalent
HMI	– H.M. Inspector of educational establishments, employed by the Department of Education and Science
LEA	– Local Education Authority responsible for the management of polytechnics and colleges of further education
MSC	– Manpower Services Commission, responsible inter alia for the Youth Training Scheme (YTS) and the Technical and Vocational Education Initiative (TVEI)
NAB	– National Advisory Body for Public Sector Higher Education
NAFE	– Non-advanced further education
NATFHE	– National Association of Teachers in Further and Higher Education
NJC	– National Joint Council for Teachers in Further Education
SAR	– Student attendance ratio
SRR	– Student overall retention rate
SSR	– Student/staff ratio
TCR	– Teacher contract ratio
TOPS	– Training Opportunities Scheme of the MSC

All the terms are defined in detail in the text when they first appear.

Introduction

1. Local authorities in England and Wales spend over £2 billion a year (gross) on further education. They employ some 90,000 lecturers to teach in the colleges and polytechnics under their management; and net expenditure after income and grants exceeds £1,550 million. Almost 400,000 full-time and part-time students are enrolled in courses of advanced further education (AFE) and 1.7 million are enrolled in non-advanced courses. Altogether, these are equivalent to 900,000 full-time students. In recent years, developments outside the control of individual councils and Local Education Authorities (LEAs) have made it increasingly difficult to manage this service at the local level:

- The uncertain economic outlook – and in particular the difficulties experienced by school leavers in finding jobs and the near collapse of traditional apprenticeships – has increased demand for further education. Between 1972 and 1982 the number of full-time students rose by 80%; and between 1978 and 1982 the number of 16–18 year olds on non-advanced full-time vocational courses increased by 50%. But the local effect in terms of numbers of students and types of courses required has been difficult to forecast in advance.
- An increasing proportion (around 4.5% in 1983–84) of places in colleges of further education (CFE) is taken up by various Manpower Services Commission (MSC) courses, which are outside the direct control of the college and Local Education Authority (LEA) concerned. The impact of the MSC's Youth Training Scheme on further education locally is difficult to determine. Individual firms, acting as the MSC's agents, will have significant influence on the programmes to be followed by the young people they are employing.
- The reduction in teacher training has forced the amalgamation of many colleges, with all the problems that any merger inevitably brings in its train.
- Most recently, part of the further education element within the rate support grant to LEAs is being passed directly to the MSC, inevitably increasing the Commission's influence over local establishments. This year, £155 million is being made available to the MSC for training courses in FE colleges; and LEAs' rate support grant is being adjusted to reflect this. Next year the figure is likely to be around £200 million.

These difficulties are unlikely to go away. And new ones are on the horizon: the demographic changes now affecting primary schools are working their way into secondary and then into further education. Between 1980 and 1994 the number of 16–19 year olds will have fallen by one third. The effect of falling school rolls is now beginning to be felt nationally in non-advanced further education; and some LEAs (particularly in relatively deprived urban areas) are ahead of the national trends.

2. Against this difficult background, the former Audit Inspectorate of

the Department of the Environment devoted considerable attention to the management problems facing individual colleges. A series of special studies was commissioned on information systems, non-teaching costs, marketing and resource efficiency. The reports that resulted from this effort were reviewed widely by the interests most directly concerned, including the Department of Education and Science, the MSC, the Council of Local Education Authorities, the Further Education Staff College at Coombe Lodge, the National Association of Teachers in Further and Higher Education, the Association of College Registrars and Administrators and the National Advisory Body for Public Sector Higher Education. In addition, District Auditors applied some of the concepts emerging from this work to individual colleges in the course of their annual audits; this provided useful practical experience on which to build.

3. When the Audit Commission for Local Authorities in England and Wales (the Commission) came into being in April 1983, it decided to carry this work forward. Auditors were asked to examine the position in at least one college in each local education authority during the first audit round for which the Commission was responsible.

4. This work began in December 1983. A total of 165 colleges was examined in detail. The end product of each local enquiry was a report describing the findings of the investigation and setting out an agreed action programme for implementing any worthwhile improvement opportunities. Implementation progress is now being tracked by auditors and the Commission every six months, so that prompt action can be taken if planned changes are not made on time and/or expected improvements do not materialise.

5. The Commission decided that it would be useful to publish a progress review at this stage for the following reasons. First, the reviews by the Commission auditors only covered just over one college in three. Many authorities will want to review the performance of the colleges that were not covered in the last audit round; and it seems sensible to describe the approach in some detail so that the practical lessons learned by the Commission and its auditors can be applied elsewhere. Second, the potential value improvements in further education are large, as reported in the Commission's first *Annual Report*; and it seems sensible to take an earlier opportunity to draw good practice to the attention of all those concerned in Local Education Authorities, central government, the local authority associations, the trades unions and elsewhere. Finally, rate and taxpayers are entitled to reassurance that action is in hand at the local level to tackle waste and inefficiency where it can be shown to exist.

6. This progress review is therefore in three parts:

- (i) *The audit approach* is outlined in Chapter One, so that it can be applied by LEAs to colleges that were not covered by the Commission's auditors last year. The first chapter, therefore, summarises the main improvement opportunities that had emerged from the special studies carried out by the former Audit Inspectorate and describes how auditors examined the situation in each establishment they reviewed.
- (ii) *The main findings* of the local reviews are discussed in Chapter Two, under the following headings: improving marketing, tailoring academic staffing to local needs, cost recovery and control of non-teaching costs.
- (iii) *Suggested next steps* are set out in Chapter Three, for central government, Local Education Authorities and the Commission and its auditors.

7. The Commission has received very considerable assistance in the

preparation of this progress review. The principals and management of the colleges reviewed by auditors last year have, by and large, been both constructive and concerned to see action taken to improve efficiency. Local Education Authorities, too, have been generally supportive of the efforts of the Commission and its auditors; Wakefield MBC, the Wirral MBC and Cleveland County Council have been especially helpful in allowing access to some local success stories. Much practical advice has been offered by the Further Education Staff College, the National Advisory Body, the Association of Principals of Colleges, the National Association of Teachers in Further and Higher Education (NATFHE), the Committee of Directors of Polytechnics and the Department of Education and Science. The Commission is very grateful for all this assistance. But responsibility for this report rests with the Commission alone.

8. Finally, the Commission and its auditors have been concerned to avoid making educational or policy judgements, e.g. about the 'value' of one course rather than another or the trade-off between costs incurred and levels of service. Value for money is not synonymous with economy.

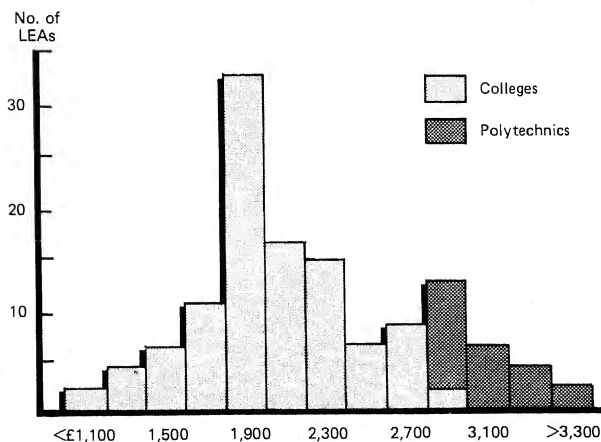
1 Audit approach

9. The Commission adopted the following approach to the reviews of individual colleges. First, with the objective of ensuring that the audit efforts were as efficient as possible, the main improvement opportunities that had emerged from the special studies carried out by the Audit Inspectorate and from previous audit examinations were identified and documented in the first volume of the Commission's handbook on *Economy, Efficiency and Effectiveness*. This was published in November 1983 and distributed to all local authorities. This summary was designed to help avoid wasted effort and give colleges and LEAs some advance indication of the areas that auditors would be examining – so that any preliminary fact gathering that might be necessary could be set in hand. Then auditors applied a common approach to examining the situation in selected local colleges. This chapter describes in turn the main improvement opportunities evaluated in each review and the approach taken to the local studies.

Exhibit 1

FURTHER EDUCATION COSTS

Distribution of costs per student – 1984/85



Source: CIPFA Education cost per student statistics, 1984/85 estimates

10. As *Exhibit 1* indicates, costs per student (full-time equivalent) vary by a factor of 3. Table 1 below shows the cost structure of a reasonably typical college which might have the full-time equivalent of 2,500 students and cost around £3–5 million a year to run, at 1984–85 costs and prices.

Table 1: COST STRUCTURE OF A TYPICAL COLLEGE

	%
Academic staff	62
Non-teaching staff	16
Supplies/services	8
Premises/grounds	10
Transport	2
Establishment expenses	2
	100 = £3m – 5m

The opportunities open to colleges to improve the economy, efficiency and effectiveness with which they use these resources (within the constraints established by the various national agreements) fall conveniently under four main headings:

- (i) Improving marketing skills, both to increase the number of students (and thus capacity utilization) and also to forecast demand more accurately, and thus avoid non-viable courses.
- (ii) Tailoring academic staffing levels more closely to local market needs. Since academic costs account for well over half of total expenditure, the way these resources are used is clearly critical to economy and to efficiency – not to mention effectiveness.
- (iii) Recovering costs promptly, and to the extent permitted by law.
- (iv) Reducing administration and other non-teaching costs without prejudicing teaching standards or management effectiveness.

The rest of this section summarizes the main opportunities that were examined under each of these headings in the course of the value for money audits at individual establishments.

Improving marketing

11. Providing services for which there is little or no demand is a waste of skilled teaching resources and expensive facilities. The opportunity cost is also high: with high unemployment levels among young people, in many instances the same resources and facilities could be used to meet important educational and training needs that are not now being met. In their report on the colleges of further education for the Audit Inspectorate, the PE Consulting Group comment (page 3) “We found no evidence of the objective study of market need. Mostly, the need was established either by the number of direct requests and enrolments or through the personal contact networks of individual lecturers with local organisations and businesses. There seems to be little formal and rigorous market research – the college is not organised or staffed to do it, and the education departments covered in the study did not appear to see it as their job.”

The symptoms of poor marketing include the following:

- High fall out rates: the overall student retention rate (SRR – i.e. the ratio of the number of students who complete the course to the number of ‘true’ enrolments) is as much a measure of effective marketing as it is of the attractiveness with which a course is presented. People leaving a course before it is complete are voting with their feet, and immediately prompt the questions: were they appropriate candidates for the course in the first place, or was there something wrong with the course? Any fall out rate of more than 20% for full-time courses and 30% for part-time

courses was regarded as cause for concern that the course had not been well marketed.

- Non-viable classes: each college's class size for particular subjects can be compared with national figures to identify possible marketing opportunities. Before the latest audit effort, District Auditors had found a disturbing number of instances of small classes, of eight students and very often fewer. What amounted to personal tuition was not unknown. Of course, there will often be local situations where colleges provide courses for which demand is limited for strategic reasons (e.g. to build relations with a key client, or to support a particular local industry). But such decisions should be taken deliberately, with the cost implications clearly established in advance. In any event, class size depends on factors other than the subject being taught. In particular the skills and experience of the lecturer, as well as the qualifications and motivation of the students and local social and economic conditions and fee policies, will need to be taken into account.
- Unexpected shortfalls in enrolments: accurate forecasting of demand is one indicator of a good understanding of the market place. Surprises (unpleasant or even pleasant) suggest the contrary. In one extreme example, a college examined by a District Auditor in 1982 was staffed for 300 (FTE) students in its education department; but the actual true enrolment was only 30.

12. An effective marketing effort by a college is likely to require the following:

- (a) Senior time and effort. Many FE establishments are sizeable operations in their own right, with a cost base appropriate to companies with sales of £5m a year or more. Such companies would have one or two senior executives assigned *full time* to understanding the market they are seeking to serve and devising ways in which their products can be made attractive and relevant to changing market needs. Colleges face similar challenges and require similar expertise.
- (b) Market intelligence. Any college needs a clear understanding of what its users think they want and how they view the present range of courses being offered. At minimum, it will be essential to obtain their views on the present courses and likely future changes in demand through regular (at least annual) interviews with local Job Centres, major local employers (especially those participating in the Youth Training Scheme), Manpower Services Commission, local secondary schools, and trades unions.
- (c) Feedback. It is difficult to see how colleges can understand how well individual courses are meeting the needs of the market unless they make systematic attempts to obtain specific feedback from the market place. This could take the form of:
 - student reports at the end of each session;
 - 'exit' interviews with students dropping out: why do individuals not continue on courses for which they have enrolled?
 - follow-up with students who have completed courses, say six months later: with hindsight (which is always improved) how could the course have met their needs better?
- (d) Tight planning and control. The principal of each college should have in place clearly agreed procedures for approving the start-up of new courses and for reviewing the resources allocated to those courses that do not meet their budgeted enrolment levels or which are not economically viable.



Almost inevitably, a systematic marketing effort will involve the need to redeploy academic resources and change courses and timetables. Some courses will need to be expanded; others will need to be redesigned; still others withdrawn – or combined with a similar course at a neighbouring college.

Tailoring academic staffing to demand

13. Once a college has agreed the range of courses it will provide to meet its particular local needs, academic staffing resources must – over time, and taking nationally agreed procedures into account – be brought into line. Where there seemed to be an imbalance between academic staffing levels and the services being provided by the college, auditors checked to satisfy themselves that teachers' contact hours conformed to national agreements, that the mix of teachers was appropriate to local needs, and that agreed establishment levels were not exceeded.

Contact hours

14. The maximum class contact hours per week for different grades of lecturer are based on national recommendations only and range from 22 hours a week for Grade I Lecturers to 13 hours a week for Principal Lecturers. Minima are not established. But colleges can take action where lecturers are not achieving their contact hours (after due allowance for 'remission', which averages around 5% for most lecturers). Table 2 provides an example of the kind of situation which earlier work had indicated was not uncommon.

Table 2: LECTURER TEACHING HOURS PER WEEK
Spring term, illustrative example

	National maximum	Average	This college Lowest	Highest
Lecturer, Grade I	20–22		[none in this case]	
Lecturer, Grade II	17–20	14.6	2.8	17.5
Senior Lecturer	15–18	12.1	4.0	13.7
Principal Lecturer	13–16	10.6	4.0	19

Moreover, it was not unknown for teaching hours to be inflated. For example:

- Where classes are combined the hours of both the former classes are sometimes added, in effect doubling the nominal teaching hours.
- Remission hours (which were counted against the minimum hours of duty) may need to be questioned. For example, in one college in one term, all ten lecturers in one division of a faculty of science and technology claimed 24 hours for attendance at development committees; the average course development allowance for the school of psychology in the same college was under 10 hours.
- Overtime payments, often costing a college £100,000 a year or more, may be incurred while at the same time staff are not meeting anything close to their maximum contact hours.
- Registers are themselves often inaccurate. In one college, a sample of 288 registers examined by the District Auditor revealed significant omissions or errors in 55% of the registers.
- Double (or even treble) counting of servicing hours for courses sponsored by one department and supplied by one or more other departments.

Such practices cannot be defended and are not tolerated in most colleges. Indeed, in some instances disciplinary action would seem appropriate.

15. Because the more senior lecturers both cost more and teach less, the mix of academic staff affects teaching costs and needs to be managed carefully. For instance, comparisons of the mix of staff with national averages often reveals possible imbalances in staff mix. In the example below, the differences represent almost 5% fewer potential contact hours a week and over 10% higher academic staffing costs (generating a cost per potential contact hour 16% higher).

Table 3: ACADEMIC STAFF MIX
Illustrative example

	This college	National average
Head of Department	3.5%	3.9
Principal Lecturer	19.4	12.8
Senior Lecturer	64.5	57.3
Lecturer Grade II	9.5	13.7
Lecturer Grade I	0.3	11.7
Assistants	2.8	0.6

Establishment levels

16. Establishment levels are an important tool for controlling costs. However, earlier work often revealed a marked difference between the pattern of staff in post and agreed establishment levels – even though the total head count may well be below the authorised levels. In the example shown in table 4 below, the college had 144 fewer potential contact hours per week (the equivalent of 7 Grade II lecturers) compared with the establishment levels – even though the head count was actually 4 people lower.

Table 4: COMPARISON OF STAFFING LEVELS
Illustrative example

	Establishment	In post at end January	Differences
Principal Lecturer	15	11	(4)
Senior Lecturer	4	33	29
Lecturer, Grade II	110	87	(23)
Lecturer, Grade I	70	64	(6)
	199	195	(4)

Cost recovery

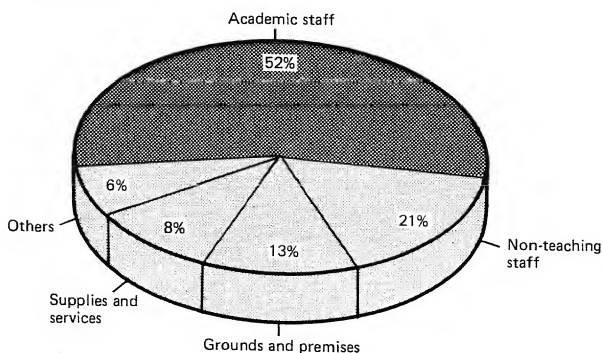
17. All colleges have a responsibility to recover promptly the costs that are due to them. The experience of the District Audit Service over the previous few years suggested that the following opportunities were worth examining in most colleges:

- Billing practices. Fees should be billed promptly, and systematic efforts made to collect any amounts outstanding. This appeared to be far from normal practice in many cases. For example, one college failed to render any tuition accounts for full-time students until March of an academic year ending in June. Interest charges *each month* amounted to £28,000, almost precisely the total audit fee for the city in which the college was located.
- Economics of catering operations. These should break even, excluding debt charges and rates. However, in many instances known to the District Audit Service significant losses had been incurred – in one case over £20,000 a year.
- Control of library books. Rolling stock-taking arrangements for libraries are almost always necessary. One college found at its most recent stock-take that 5% of the books were missing with a replacement value of well over £100,000; and no control over book issues or system of fines was in place.

- (d) Economics of 'full cost courses'. Colleges can (and often do) set prices for courses that do not recover the full costs, where this is dictated by local market conditions. However, many colleges run special courses for organisations such as the MSC or employers, on the understanding that the full costs will be recovered. Charges for MSC courses are agreed nationally. In some recent cases, auditors had found that there has been a failure to recover 30% or more of the costs of courses that were supposed to break even. This can suggest two problems: inability to assess costs in advance and lack of cost control.
- (e) Reimbursement of consultancy expenses. Many colleges employ lecturers who use college resources to support consultancy work. This is a perfectly acceptable practice. But procedures for recovering college expenses vary widely and consulting work was not always identified.
- (f) Billing rates for accommodation. Students should, obviously, be billed at the full rates permitted by law.
- (g) Outside use of college resources. There may be potential for selling the use of the college's facilities commercially without limiting students' use of them.

Exhibit 2

COST STRUCTURE OF AN ILLUSTRATIVE POLYTECHNIC % of costs per student



Source: Polytechnic Expenditure, Audit Inspectorate March 1983

Non-teaching and administration costs

18. As *Exhibit 2* shows, although academic staff are the largest element of cost, non-teaching costs can amount to well over 40% of the total. The table below provides details of the non-teaching manpower for the college shown in *Table 1* (paragraph 9) above.

Table 5: NON-TEACHING MANPOWER IN A TYPICAL COLLEGE
(Staff in post, FTE)

Administrative staff	37
Technicians	41
Computer staff	6
Learning resources	17
Student services	4
Total	105

In addition to examining ratios such as the relationship between academic and administrative hours and costs, the Commission suggested that auditors should compare administrative costs per student with those for similar colleges. Since there is, inevitably, a fixed cost element in administering a college one leading indicator of excess administrative costs is if costs per student are high relative to the size of the college – assuming that there are no obvious differences such as the number of sites, number of courses and so forth which would invalidate the comparison.

19. Finally, several previous audit reports suggested that certain other non-teaching costs were worth examining in most colleges. These included:

- Cleaning costs. These usually amount to over £350,000 a year in a college with just over 4,000 (FTE) students. There should be a good reason why cleaning staffing levels in classroom areas should not be based on a cleaning rate of 33m² an hour, the rate achieved in many secondary schools.
- Energy costs. In a medium sized college, these could easily amount to £200,000 a year at current prices. Apart from ensuring that appropriate energy conservation measures have been taken, the most obvious source of savings is in purchasing. In particular, every effort should be made to ensure that the appropriate electricity and water tariffs are applied.
- Rates. There have been instances where colleges have continued to pay rates on unused buildings and even on buildings that have been sold or demolished.

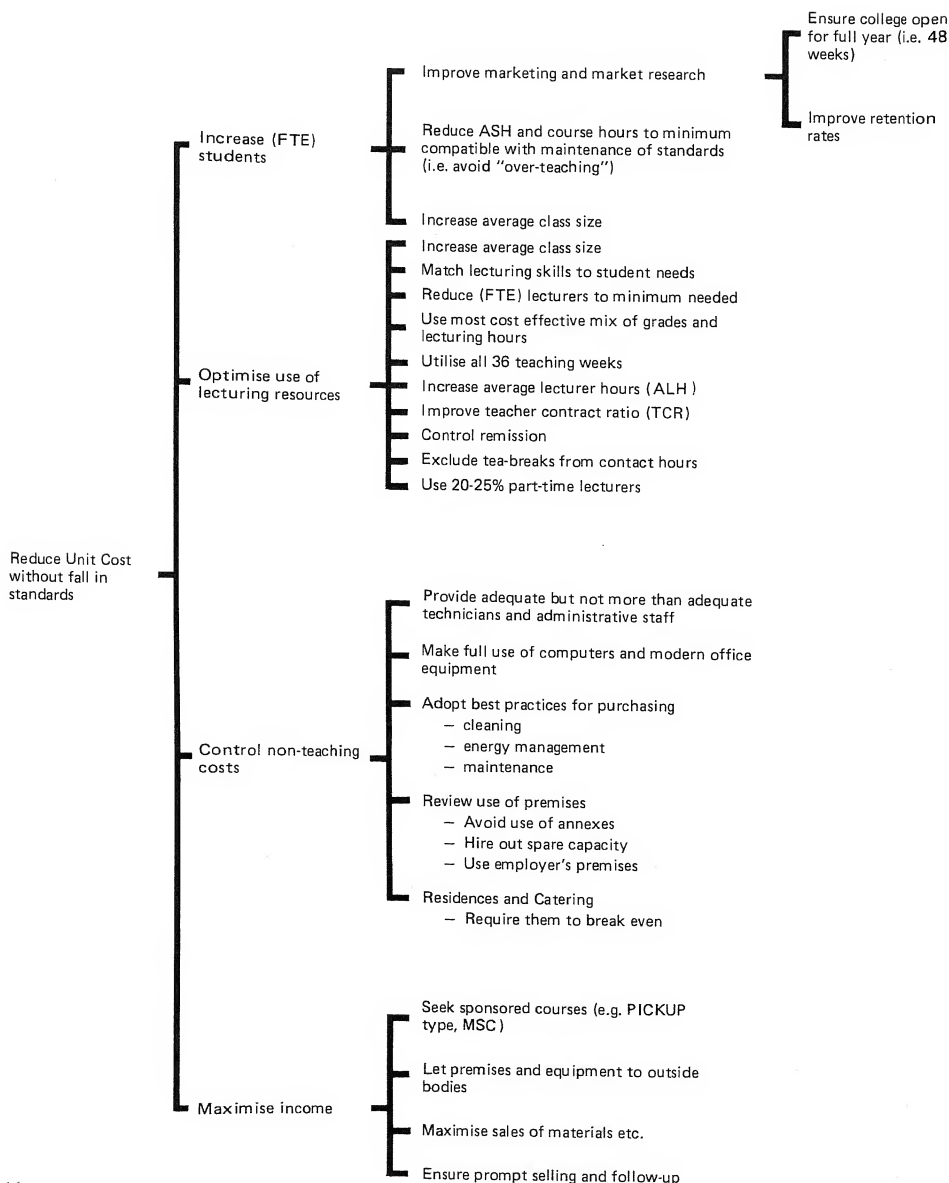
20. *Exhibit 3* (on the next page) summarises the main initiatives examined in the local audit projects and the benefits that might be expected to follow. They reflect steps that have already been taken successfully in a number of colleges. As is so often the case, worthwhile gains are possible simply from applying generally the approaches and philosophy of the more successful. Identifying possible improvement opportunities, validating them and developing realistic proposals for action clearly required a systematic approach to the project – building on the work that had already been done by the District Audit Service and former Audit Inspectorate. This was especially necessary because the time available to auditors in most colleges was limited to 30–40 man days of audit time (for which the authority was charged at the rate of £170 per day). The next section describes how the projects were conducted, for the benefit of those authorities wishing to embark on reviews of establishments not covered in the last audit round.

PROJECT APPROACH

21. The Audit Inspectorate reports *Education: Polytechnic Expenditure, and Further Education Colleges: Guide to the Measurement of Resource Efficiency* provide a detailed guide for those embarking on projects at individual colleges. The appendices to the annex of the latter report, provided particularly useful practical guidance. Each local project was divided into four phases, which usually overlapped:

- (i) **Planning (3–5 days).** Typically, the project began with an examination of the readily available information – including the relevant budgets, income and expenditure statements, and establishment levels, and the standard ratios that provide a reliable comparison with other similar colleges or national averages, e.g. student/staff ratio (SSR), average student hours (ASH), average class size (ACS), average lecturer hours (ALH), teacher contract ratio

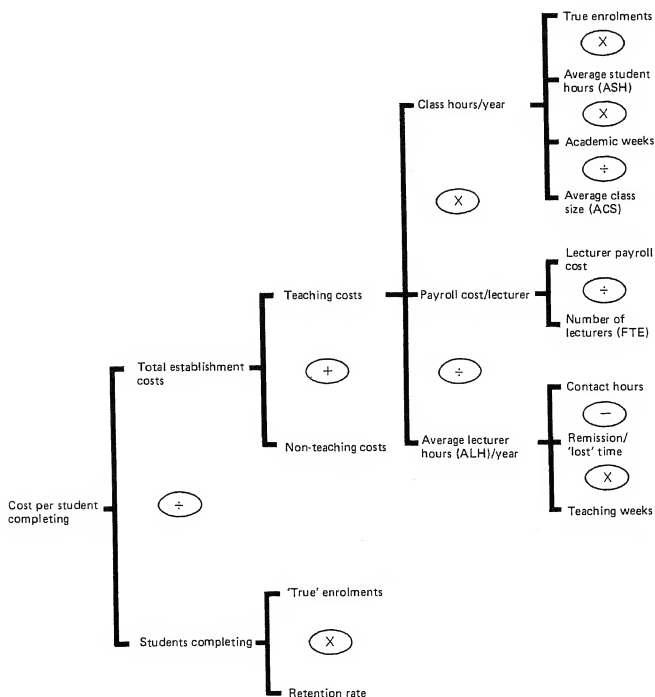
MAIN INITIATIVES EXAMINED IN VFM PROJECTS



(TCR), and student retention rates (SRR). *Exhibit 4* shows how those ratios are inter-related. The next step was a round of interviews to understand the perceptions of some of those involved about the strengths and weaknesses, and the problems and opportunities facing the college. The interview round usually covered such people as the Director of Education, the principal and selected heads of department. At the end of the planning stage, it was usually possible to write down a number of hypotheses on the nature of the improvement opportunities available within the college.

Exhibit 4

FE COST STRUCTURE: RELATIONSHIP OF KEY RATIOS



- (ii) **Collecting and analysing the information (12–15 days).** The Audit Inspectorate reports outlined the key steps involved and provided some useful practical hints on how to avoid the pitfalls that confront the unwary. In most reviews, the steps include the following, in this order:

- Collecting the college records, i.e. academic staff schedules, department registers, Burnham return, Pooling Committee staff/student hours return, academic staff list, summary of part-time and overtime claims, and lecturer timetables.

- Examining registers and returns for accuracy.
 - Assigning pooling groups to departments and sub-departments. Because optimum class size, student/staff ratio, and student class hours are affected by the type of work undertaken by a college, the data for different courses needs to be collected and analysed separately. There are three different pooling groups: Group One relates to laboratory/workshop based work; Group Two is classroom based work; and Group Three is work carried out by Faculties of Art and Design, and includes music and drama.
 - Calculating the various ratios for each main department.
 - Checking major non-academic costs against those of similar colleges, e.g. administrative staffing, cleaning rates (m²) per hour.
 - Reviewing cost recovery procedures, e.g. billing dates and collection cycle, billing rates for accommodation, library stock, procedures for recovering consultancy support, economics of catering and special courses, marketing of college facilities.
- (iii) **Developing conclusions and documenting the result (5-10 days).** Analysis of itself is of only very limited use. The end product of each value for money project was to be a set of recommendations for action, to be taken before the relevant officers and members of the authority if appropriate. Since effective communication is obviously critical, it was clearly important that sufficient time was taken to analyse the information that had been collected and to recommend what the authority needed to do.
- (iv) **Syndicating the results (5-10 days).** The desired end product of the project was not simply a report (however elegant and well argued); it was constructive action. The Commission considered it essential that the necessary time be taken to syndicate the results among those whose support is necessary if action is to result. In particular, before submitting a formal final report (which should ideally reflect actions that have already been agreed) it expected auditors to review the report in detail with the managers responsible. These would certainly include the college principal and his deputy, and the director of education. They might also include the chairman of the Education Committee, the chief executive and the leader of the Council if the subject matter warranted.

* * *

This approach has been applied, and the opportunities described in the first part of this chapter evaluated, in 165 individual establishments. The next chapter summarises the main findings and some of the good practices that the Commission's auditors observed in the course of their reviews.

2 Results of audit investigations

22. During 1984 the Commission's auditors made enquiries at 165 colleges in England and Wales. These value for money projects have identified opportunities for improvement worth over £50 million a year – around £300,000 per establishment examined. The potential value improvement for the system, nationwide, seems likely to be of the order of £125 million–150 million a year at current salary and cost levels. Opportunities could take the form of providing places for at least 75,000 extra (full-time equivalent) students with the same resources or by teaching the existing numbers with fewer resources (e.g. fewer lecturers, fewer ancillary staff and buildings); or by a combination of these measures*. Opportunities in excess of £1 million have been positively identified at some large establishments as Table 6 below shows:

Table 6: SUMMARY OF OPPORTUNITIES IDENTIFIED IN FURTHER EDUCATION

1983–84 Audits Potential improvements £'000/year	% colleges examined
<100	15
100–200	31
201–400	22
401–600	1
>600	31
100 = 165 establishments	

23. The increased value for money that was identified by auditors stems from each of the four main areas of opportunity discussed in the previous chapter. Specifically:

- (i) Marketing needs to be strengthened in many colleges, so that the fullest use is made of the resources available within further education.
- (ii) Academic staffing is often not tailored to local needs.
- (iii) Cost recovery is patchy. Some establishments have an excellent record; others are less effective in collecting money due to them.
- (iv) Non-teaching costs per student vary widely from college to college; the explanation is often management effectiveness (or the lack of it) rather than those factors usually cited as accounting for the difference between one establishment and another.

This chapter describes the opportunities that appear available under each of these headings in turn, drawing on the experience and practice of the many successful colleges that were examined.

STRENGTHENING THE MARKETING OF FURTHER EDUCATION

24. At the end of February 1985 over 16% of people aged 16–19 were registered as unemployed – over 500,000 people. In such circumstances it would be more than unfortunate if the fullest possible use was not being

* As Exhibit I showed, median net annual cost per student was £1,730 in 1984–85.

made of the resources available in further and higher education. Table 7 below shows the numbers of students now in higher and further education and the DES projections for 1987-88. The figures cover England only, except that the higher education figures include students in universities in Wales and Scotland.

Table 7: STUDENTS IN HIGHER AND FURTHER EDUCATION (000)

	1984-85 (estimated)	1987-88 (projected)
Higher education		
Undergraduates (full-time and sandwich)	402	400
Postgraduates	39	38
Part-time	281	290
Non-advanced further education (full-time equivalents)		
16-19 year olds	277	290
Others	249	260
Total (excluding part-time)	967	988

25. Effective marketing is as vital to polytechnics and colleges as it is to a commercial enterprise, particularly during a period of rapid change. It requires skills which are not necessarily best acquired during the normal course of lecturing work. Marketing covers both the assessment of short-term and long-term need and the 'selling' of education and training opportunities to students and prospective employers. Failure to assess and exploit the market for courses and to identify the needs of students or potential students tends to be reflected in low enrolments, unduly small class size for particular courses, and low student attendance and retention rates. These inevitably mean poor value for money both in terms of wasted resources and lost opportunities for potential students whose needs have either not been recognised or have been accorded too low a priority for provision to be made. Such waste is particularly regrettable when so many young people lack gainful employment.

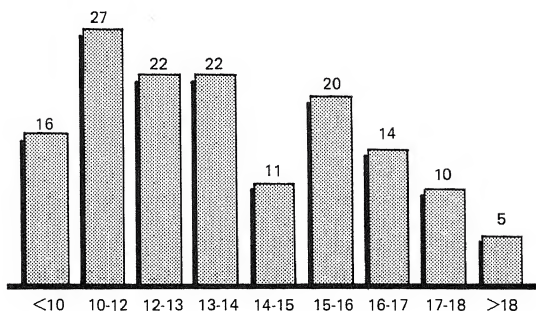
26. The importance of effective marketing of higher and further education is well recognised. For example, a report by HM Inspector of Schools (HMI) on the effects of local authority expenditure policies on education provision in England (1983) said that [in respect of non-advanced further education] "while the range, balance and mix of provision of courses was judged to be satisfactory to good in seven-eighths of LEAs, in almost half the sessions where the quality of work seen was less than satisfactory the student's needs had not been clearly identified."

27. Nonetheless, there is disturbing evidence from auditors' reports that in many instances colleges are not marketing their facilities well:

- Average class size (ACS) varies very considerably even between similar institutions. Where class sizes are relatively small and local youth unemployment is high there are, prima facie, missed opportunities. For example, as *Exhibit 5* shows, class sizes for similar courses vary widely. Group sizes of 5 or 6 students are not uncommon. The exhibit deals with advanced courses; but as Appendix A shows the same variations are evident in non-advanced courses. Yet, the experience of the MSC is that average class size for classroom-based courses during the 1983-84 academic year was 16.2 for Training Opportunities Schemes (TOPS) and 15.0 for Youth Training Scheme (YTS) courses; on practical courses the figures were 13.5 and 12.5 respectively.

AVERAGE CLASS SIZE, 1984**Group one, poolable courses**

Number of establishments in each class size band

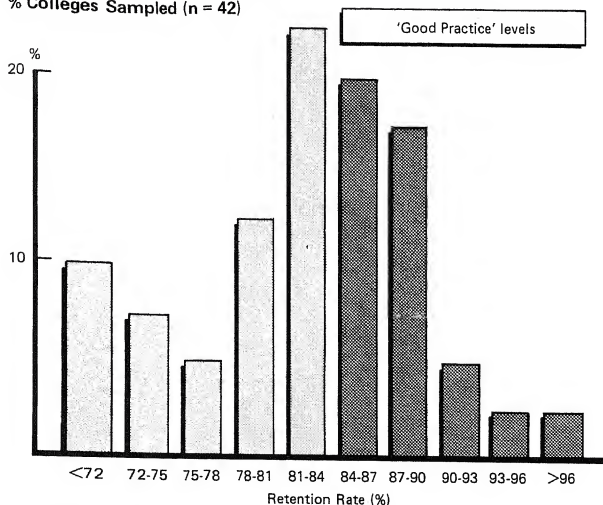


Source: Analysis of 1984 Monitoring Reports

- Overall retention rates – the proportions of ‘true’ enrolled students who complete the course – also vary disturbingly widely, as *Exhibit 6* (on the next page) shows. In a sample of establishments examined by auditors in the last audit round, 10% had retention rates of 90% or better while 17% of establishments had drop-out rates of more than 25%; even among similar courses overall retention rates vary from under 65% to over 95%. It has long been recognised that there is always a fall in the numbers attending classes between initial enrolment and final completion. HMI have detailed this process in their survey of part-time release for 16–19 year olds (*Education for Employment*, HMSO 1984). The extent of the fall needs to be monitored by recording attendance and retention levels. Auditors found wide variations in these levels. Low retention rates represent a waste of resources and a loss of opportunity for students who might have completed courses had they been able to secure a place. These losses could be rooted in a number of factors including poor marketing, poor course control, inappropriate curriculum, inadequate teaching, poor student selection and financial hardship. While poor retention rates in themselves are not absolute measures of performance, they certainly indicate where enquiry is merited.
- Student attendance ratios (SAR) also show wide variations between establishments. This ratio shows the extent to which planned provision for student taught hours is matched by actual attendance in class. The lower quartile in the sample of establishments showed attendance rates of 70% or worse – that is, 30% or more of the expected students did not attend on average. Since these attendance rates are the average for the college, it follows that in some courses attendance rates must have been well below 70%. By contrast, a quarter of the sample are achieving average attendance ratios of 83% or better.

OVERALL RETENTION RATES

% Colleges Sampled (n = 42)



Source: Analysis of Auditors' Project Reports, 1985

28. The scale of the opportunity available is perhaps masked by the dry statistics. The results can perhaps best be expressed in terms of full-time equivalent (FTE) student opportunities. If all those colleges in the sample covered by auditors that are now below average in terms of class size and retention rates were able to achieve median performance only, an additional 12–15% of students would complete worthwhile (presumably) courses. Nationally, this would represent 50–60,000 additional full-time students in non-advanced further education alone. There would only need to be a small increase in resources; so cost per (FTE) student completing could fall, by up to 10%.

29. The natural response to the suggestion that average class sizes can be increased by more effective marketing is that while theoretically possible, practical realities make such gains difficult to achieve. However, such a response ignores the considerable progress that has been made over the past three years. The following table shows changes in median average class size between 1981–82 and 1984–85. In the interests of simplicity, the table covers poolable courses only; similar progress was achieved in non-poolable courses.

Table 8: CHANGES IN CLASS SIZE: FY 1982–85
Poolable courses only – median establishment

Course	Average size (1984)	Change since 1981 actual	%
Polytechnics:			
Group One	15.7	+1.5	+10.6%
Group Two	14.3	.9	6.7
Group Three	13.0	1.3	11.1
Colleges:			
Group One	12.9	.5	4.0
Group Two	12.7	.7	5.8
Group Three	11.1	.3	2.8
Average	13.3	.9	7.3

Indeed, a recent publication from the Further Education Staff College, *Responsibility and Responsiveness: Case Studies in Further Education* illustrates vividly the impact that local marketing initiatives can have – often in the most difficult circumstances.

30. Moreover, the audit reviews provide many examples of good marketing practice which was not universally (or even widely) adopted. For instance:

- The establishment of a consortium for collaborative marketing at Coventry covering the University of Warwick, Coventry Polytechnic and three other colleges.
- Better links with local 'markets'. There were many examples of visits and presentations to local schools, the Manpower Services Commission (MSC) and Industrial Training Boards as well as regular consultation with employers through visits and through meetings of advisory panels for individual faculties. The Youth Training Scheme has given impetus to co-operation between colleges and employers and assumes much greater importance now that part of monies formerly allocated directly to local authorities for NAFE has been transferred to the MSC for use in colleges.
- Course sponsorship. In some colleges, principals have been successful in securing sponsorship for full cost courses. For example, Barking College of Technology provides block release engineering and special courses for Ford – which is represented on the governing body. Not all LEAs, however, recognise the disincentive effects of sequestering to the general rate fund all the income from such initiatives. A productive use for the income would often be found in investment in up-to-date equipment. In addition to full cost 'closed' courses for particular sponsors, open courses (mainly for a specific sponsor but available to other students) may be run at lower charges within the LEA's discretion but still making a useful contribution to fixed costs. One LEA (Wirral MBC) has set income targets for full cost courses and for additional places on open courses. Other LEAs and colleges may wish to consider instituting this practice.
- Consumer research. Few colleges follow the MSC practice of asking former students whether they are in employment, whether that employment makes use of taught skills and what they thought of the courses. But some colleges do circularise 'drop outs' to find out the reasons for their failure to complete their studies; others, like Worthing, undertake in-depth market research of specific course requirements; and some follow the practice of Norwich City College of tracking the employment record of their students after graduation.
- Promotion of college services through membership of chambers of trade and commerce, direct contact with overseas government agencies, advertising in the local press and council newsheets, and through use of libraries, careers advisory centres, Job Centres and other public offices to display available courses and facilities. For example, Lincoln College of Technology is one of a number of colleges to establish an advisory committee in each academic department with membership from local industry, commerce and public services; and for the first time, the College prospectus is being used as a marketing tool.
- The review of inter-authority recoupment claims to establish whether there is an unsatisfied local need or unnecessary

duplication of courses. In one instance a local saving of over £800,000 could be made by providing places on courses within the LEA rather than requiring 600 students to travel to neighbouring authorities.

- Liaison with nearby colleges to eliminate duplication. It may not always represent the best use of resources to introduce courses locally. The location of courses generally needs careful consideration – often extending beyond local authority boundaries, particularly in urban areas. For example, a further education service initiative to provide re-training for redundant steel workers involved co-operation between four LEAs: Sheffield, Rotherham, Doncaster and Barnsley.
- Incentives to students. Governors at one college motivate attendance by not permitting students to take examinations unless they have made 90% of the possible class attendances.
- Wider availability of college facilities and expertise. Some colleges have moved away from being open for teaching only during the three-term 36 week year, to a 46–50 week college year. In some cases it has been possible for colleges to provide both courses and lecturing staff for overseas customers either within the college or in the country concerned. Similarly courses are sometimes provided within the United Kingdom in employers' premises.

31. As mentioned earlier, polytechnics and colleges have more than academic resources to market. The use of spare capacity in college premises and facilities can be a useful source of income. Some establishments take this aspect of marketing seriously. Facilities are provided for conferences and seminars by outside bodies, for social functions including the provision of catering and for local clubs.* In some cases it may be possible to obtain fuller utilisation of equipment (including computers) by making it available to others within and without the authority. For example:

- A contract valued at over £150,000 has been agreed by a polytechnic with a private company for vocational use of its hostel facilities. This should result in the hostel account showing an annual surplus.
- The computer manager at another polytechnic has a clause in his contract of employment which requires him to generate income from commercial developments. Net income, after allowing for the direct cost of providing the service, is available to purchase new computer equipment. Income of approximately £50,000 a year is currently being achieved.
- Short courses are often offered by institutions and the income generated is often useful in providing equipment that might not otherwise be available.

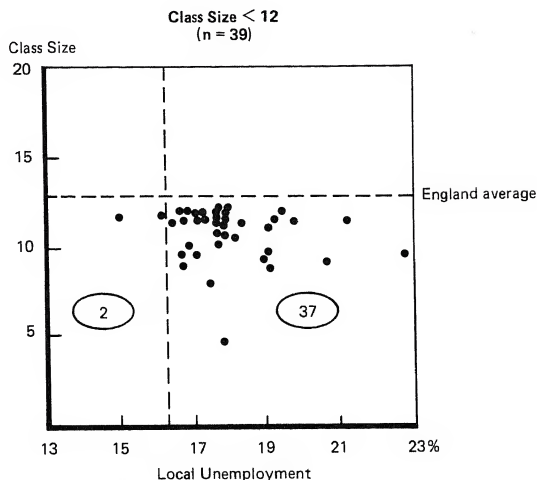
Of course, the full cost implications will need to be worked out in advance. Some LEAs have discovered on investigation that the additional staffing and equipment costs involved more than offset the extra income.

32. However, sadly, many colleges are simply not geared up to market their services. As *Exhibit 7* shows, many colleges in areas of relatively high youth unemployment have unexpectedly small average class sizes in Group One non-advanced courses – the kind of workshop-based courses which are likely to be more appropriate to school leavers with few academic

* The Higher Education Accommodation Consortium acts as an information centre and clearing house for about 50 establishments wishing to offer residential accommodation.

YOUTH UNEMPLOYMENT AND CLASS SIZE

Group One, Non-Advanced Courses, 1983-84



Source: Audit Commission analysis of Auditors' returns and Department of Employment information on total youth (16-19 year old) unemployment in travel to work areas (TTWA) for January, 1985

qualifications. All but two of 39 colleges in the sample with average class sizes of less than 12 were in travel-to-work areas of especially high unemployment.

33. There is, therefore, apparent scope for more effective marketing. The Further Education Staff College and the Further Education Unit are about to produce a marketing manual which provides a useful analysis of marketing requirements and detailed practical advice on the application of marketing techniques in this field. MSC has also published papers, presented at the National Conference in 1984 of the British Association for Commercial and Industrial Education, *Marketing for Colleges, Polytechnics and Universities*. In addition, the team responsible for progressing the DES Professional Industrial and Commercial Up-dating (PICKUP) initiative, which aims at encouraging the updating of existing skills and practices, is able to advise on and promote the provision of courses to assist local employers. More colleges could make use of the team's services. The short full cost courses provided under the PICKUP initiative provide benefits in updating both employers and colleges and are a useful source of income.

34. Marketing and course control are linked. Good marketing will help avoid the inauguration or continuance of non-viable courses. In 1966, the Secretary of State accepted the recommendations of the Pilkington Report on the *Size of Classes and Approval of Courses*. This report recommended that the following should be normal minimum requirements for initial enrolments before a course is approved: 24 for full-time (including sandwich) courses, 15 for part-time day courses involving a large element of workshop practice and 20 for other part-time courses. There is little evidence of widespread adoption of these recommendations for NAFE courses. Where criteria are set for courses approval, 15 is the most common minimum number of enrolments specified. Some LEAs also require the continuation of a course to be reviewed if numbers of attendances fall below specified levels.

35. Obviously, too rigid an application of such criteria may not be sensible. Certain courses must inevitably involve low group sizes. For example, teaching the profoundly deaf might require a 1:1 student/staff ratio (SSR). But any course failing to meet the Pilkington criteria should be subject to evaluation. The important objective must be to ensure that class sizes are adequate overall. Among the course control arrangements which have been set up are:

- A 'clearing house' at LEA level which vets applications to initiate courses, to ensure that they satisfy criteria laid down in Council policy.
- A justification to the principal for inauguration of a course, including evidence that sufficient enrolments are likely. For successful applications, weekly reports on attendances during the first term and a review at the end of that term are required.
- Meetings of principals to discuss course programmes.
- Timetabling to ensure 'joint meetings' for subjects common to different courses or where courses provide for a variety of subject options.

Table 9: STUDENT ENROLMENTS AND CLASS SIZE
Autumn term, Lincoln College of Technology

Courses	Student enrolment (FTE)		Average class size	
	FY 1983	1984	1983	1984
Group One	692	1,150	10.1	12.1
Group Two	1,256	1,300	13.3	15.6

36. It is tempting to argue that marketing efforts take time to pay off and that it is unrealistic to look for near-term results. This is not necessarily so. The table below shows the changes in course enrolments in a single year at one college that had upgraded its marketing effort.

These achievements, which resulted very largely from an improved marketing effort, will result in the student/staff ratio moving from 10.3:1 to 12.3:1.

TAILORING ACADEMIC RESOURCES TO LOCAL NEED

37. Almost 90,000 (FTE) lecturers are employed in polytechnics and colleges. As Exhibit 2 showed, academic staff account for over 50% of the costs in a typical further education establishment; so it is essential both from a cost and value point of view that lecturers are optimally deployed – that is, that they provide as much value to students as is possible given the mixes of courses being made available.

38. Inefficient use of scarce teaching resources can arise from several causes – apart from poor marketing which inevitably leads to under-utilised teaching capacity:

- (a) Excess teaching capacity. Staffing levels may not have been adjusted to changes in demand – resulting in a student/staff ratio lower than the nature of the course mix would dictate.
- (b) Inappropriate grading mix. As indicated earlier, the terms and conditions of service for lecturers in further education provide maximum (but not minimum) class contact hours per week during the academic year. These decline as lecturers' seniority increases. The mix of staff therefore influences the teaching hours available as well as the cost per hour. For example, analysis of academic staff cost per student in six polytechnics carried out for the Audit Inspectorate in 1982 showed a variation of 33% between the lowest and highest – within similar overall student/staff ratios.
- (c) Lower than necessary lecturer productivity. This in turn could stem from lower than average lecturer class contact hours (ALH) and higher 'remission' – i.e. out of class duties which are compensated by a reduction in class contact hours. It could also arise from lecturers' failure to provide the contact hours that have been planned – as reflected in the teacher contract ratio (TCR), which shows the ratio of actual class contact hours and the maximum available under local agreements.
- (d) Over teaching. If students spend more time in the classroom than is necessary for educational purposes, this will obviously limit the availability of teaching facilities for other students – quite apart from the education consequences that may follow.

39. *Exhibit 8* (on the next page) shows the relationship between cost per student, student/staff ratios and the number of students that can be taught; and Appendix A shows the key ratios for the different groups of courses in polytechnics and different types of colleges of further education.

The cost and service implications of quite small differences in mix of lecturers and permitted class contact hours alone are startling. Table 10 shows the difference between the lowest and highest cost methods of staffing to teach a similar workload of 100,000 weekly student hours, distributed on the national pattern. The lowest cost is derived from a combination of the lowest proportions of higher grade posts permitted under the Burnham agreements and the maximum contact hours allowed for the grade.

IMPACT OF IMPROVEMENTS IN SSR ON TEACHING OPPORTUNITIES AND UNIT COSTS – 1984

Change in (FTE) students

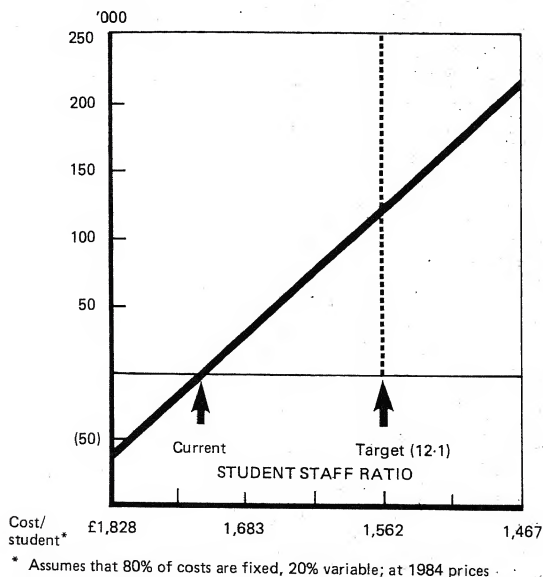


Table 10: POTENTIAL RANGE IN COSTS TO TEACH SIMILAR WORKLOADS
£000, at 1984 prices, illustrative only

	Lowest	Highest	Difference
Principal Lecturer	142	425	+199%
Senior Lecturer	530	723	36
Lecturer Grade II	724	1662	130
Lecturer Grade I	950	1010	6
Part-time Lecturers	570	—	n/a
Total	2916	3820	31

Each of the factors is therefore discussed in more detail below.

Student/staff ratios

40. Average class size (ACS) is a major determinant of the student/staff ratio; and some authorities use this measure as their prime indicator of resource utilisation. As is the case with any management ratio, great care must be exercised in the use of ACS. The main purpose of the analysis is to prompt constructive questioning – not to establish ‘norms’ to be applied rigidly. As stated above, there will always be good reasons for variations in class sizes, even for similar courses. Local social and economic conditions, the availability of public transport, the motivation of pupils, and authorities’ fees policies can all affect a college’s ability to tap the potential market for a particular course – and thus the average class size and student/staff ratio. However, auditors have often not been able to explain the differences in average class size shown in Exhibit 5 by reference to these factors.

41. Many LEAs focus on the student/staff ratio (SSR) relating the number of lecturers to the number of (full-time equivalent) students enrolled. The National Advisory Body for Public Sector Higher Education (NAB) has included among its recommendations for advanced further education (AFE) an overall system target SSR of 12:1. AFE has been the subject of more rigorous central control than non-advanced further education (NAFE), through the pooling system and through the requirement for course approval. Different considerations apply to NAFE. Much of advanced further education involves full-time students who have to apply well in advance for a limited number of courses and are highly motivated to complete them. Non-advanced further education, by contrast, provides a wider range of courses and is subject to sharp variations in demand at short notice. So colleges are often faced with a choice between failing to meet student and employer needs and running a costly course.

42. Nevertheless, there seems to be no reason why an overall system target SSR of 12:1 should not be achievable eventually in most polytechnics and colleges for both AFE and NAFE. There are already examples of its achievement at some institutions for each of the three main faculty groups. Table 11 shows, for each class of establishment, the percentage of colleges that are now achieving a student/staff ratio of 11:1 or more. The figures are drawn from the 1984 Monitoring Report; they are the average for all types of course except for Group Three poolable courses – where only two major FE colleges had average ratios higher than 11:1.

Table 11: ESTABLISHMENTS WITH SSR >11:1
% – Average for all courses

Polytechnics	48%
Major FE colleges	25
Welsh FE colleges	18
Minor FE colleges	14
Intermediate FE colleges	11

43. Clearly, a 12:1 ratio for NAFE will take some time to achieve; but an intermediate target of 11.2:1 appears achievable within the terms of the Burnham and NJC agreements and would offer valuable improvement potential. Achieving a student/staff ratio of 11.2:1 would enable an additional 75,000 students to be taught at no significant extra cost. This should be the first target for LEAs with colleges not achieving this level of resource utilisation at present.

Grading mix

44. The average weekly hours of class contact by lecturers is determined largely by the bands of maxima specified in national agreements negotiated in the National Joint Council for Teachers in Further Education (NJC). These are set out in *Conditions of Service for FE Teachers in England and Wales* which is generally known as the Silver Book. They are as follows:

Principal Lecturer	13–16 hours
Senior Lecturer	15–18 hours
Lecturer, Grade II	17–20 hours
Lecturer, Grade I	20–22 hours

As can be seen, the number of hours (out of 30 per week) which are spent in face to face contact with students falls as the lecturer progresses through the grading structure. In addition, the terms of the national agreements are adopted in local agreements on conditions of service.

45. Local agreements normally provide for contact hours within the bands shown above, but rarely at their maxima. This is the result of the interaction of the application of the discretion allowed within the Burnham document with locally agreed conditions of service made under the NJC

agreement, the criteria for progression and the past course history of the establishment. Some colleges have agreements which are clearly not in line with the Silver Book. In the 1984 Monitoring Report the average lecturer hours were shown as:

	Polytechnics		Colleges	
	Actual	% Maximum	Actual	% Maximum
Principal Lecturer	12.4	78	12.3	77
Senior Lecturer	13.9	77	15.1	84
Lecturer, Grade II	14.3	72	17.3	87
Lecturer, Grade I	18.1	82	19.4	88

46. The Burnham agreements provide a range of grading distribution for different levels of advanced and non-advanced work. For the most advanced work, 20-30% of the teaching must be done by Principal Lecturers, while for the least advanced (work category V) Lecturers, Grade I are able to undertake 70-80% of the work. But the ranges specified in the agreements are invariably quite broad (usually 10-20 points); so, for instance, it would be possible for one college to assign 30% of category IV work to junior lecturers and another to assign 60% to this group – both within the terms of the current agreements. It is clear therefore that the Burnham agreements and the so called Silver Book provide scope for wide differences in staff levels, grading and cost. A move from the current situation to the most favourable application of Burnham and the Silver Book (in cost terms) would itself result in a student/staff ratio of 11.6:1. It would be worth more than £120 million a year in teaching costs alone.

47. One particular cause of imbalance is the virtually automatic progression from Lecturer Grade II to Senior Lecturer for those who teach at advanced level for 50% of their time. The extent to which the 50% rule has been rigorously enforced is variable; some LEAs now require notice from their colleges if progression is proposed, so that the criteria for advancement may be checked. Currently there are more Senior Lecturers than Lecturer Grade IIs, although there is little prospect of the former being fully utilised in the higher grade. In addition to the increase in salary level which accompanies promotion, Senior Lecturers provide two fewer contact hours a week. Thus the promotion of eight Grade II Lecturers to Senior Lecturer brings with it the need for one additional Grade I Lecturer. The loss of teaching time and rise in costs are permanent.

48. There is a widely recognised case for giving promotion opportunities and status to demanding work in new areas, often involving less motivated and qualified students. This emphasizes issues raised elsewhere in this report about grading structure and, in particular, the automatic reduction in class contact hours associated with promotion. One possible answer to the problem would be for contact hours in the future to be linked to the need of the work rather than to lecturers' grades.

49. There are numerous local arrangements outside Burnham and the Silver Book both for contact hours and progression. At one polytechnic, for example, lecturers of all grades are conditioned to 14 hours teaching a week for 35 weeks. At another college all lecturers are required to teach 18 hours a week on average, during a 36-week year. At a third college, with high average class size and heavy local youth unemployment, all Grade I Lecturers are expected to provide 22 class contact hours per week and all Grade II Lecturers 18 hours.

Lecturer productivity

50. Lecturer productivity is influenced by factors other than class size. Over 40% of the average lecturer's time is not spent in face to face contact

with students – it is inevitable that a significant proportion of a lecturer's week should be taken up with matters ancillary or related to teaching contact. Academic staff development, in particular, needs to be allowed for; and reference has already been made to the necessity for marketing efforts to be strengthened.

51. The problem of ensuring that lecturers can meet new needs and demands from their 'market' should not be underestimated. HM Inspector's report says [in respect of NAFE] "the performance of up to one fifth of the institutions visited was judged to be adversely affected by a shortage of appropriately experienced lecturers. This problem appeared to centre less upon absolute numbers and more upon the capacity of lecturers to adapt to changing demands. These observations were most common where lecturers were experiencing difficulties in adapting their teaching methods to students with different backgrounds and learning needs: in providing suitable courses within the YTS and in acquiring the knowledge and skills related to computers and other newer kinds of technological equipment". The report referred (as have some auditors) to the inadequacy of staff development in certain institutions and called for the release of lecturers into industry and commerce to bring their technical knowledge up to date.

52. The other factors that influence lecturers' productivity are the amount of remission, the length of the teaching year, and the extent to which lecturers provide the teaching hours to which they are committed by local agreements. Each of these is discussed further below. The scale of the opportunity is not trivial. Increasing lecturer hours per week by one would provide educational opportunities to the equivalent of over 50,000 full-time students. Yet the table shows a difference in average lecturer hours of 2-3 hours between the upper and lower quartile of polytechnics surveyed. There are some polytechnics with average (sic) lecturer hours for certain courses of under 12 hours a week. Clearly, if average hours are no more than 12 a week, there must be many lecturers teaching well under 10 hours a week (out of the average working week of 30 hours) during an academic year that could be 36 weeks, but is often less.

Table 12: AVERAGE LECTURER HOURS IN POLYTECHNICS – 1984
Hours/week, poolable courses only

Course	Upper quartile	Median	Lower quartile	% ≤ 12
Group One	14.3 hours	13.1	12.4	21%
Group Two	13.6	13.0	11.7	38
Group Three	17.3	16.0	14.5	3

A similar picture emerges from analysis of lecturer hours in colleges of further education, as Appendix A shows.

Remission

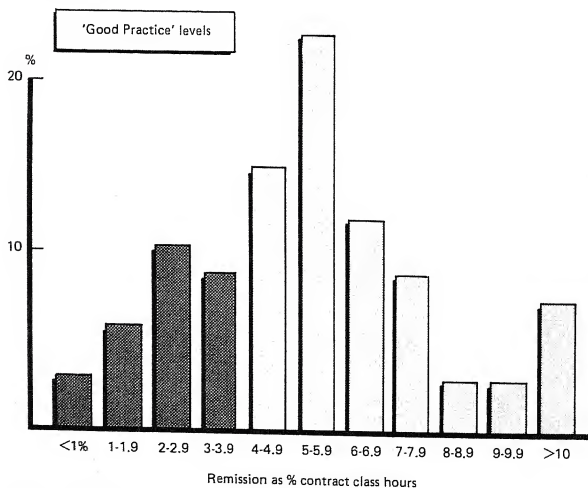
53. Non-teaching time in a working week of 30 hours and the two non-teaching weeks in the working year are intended to provide for preparation, marking, administration, enrolment etc. However, it is relatively unusual to find any reliable information on how this time is used. Lack of hard information must be a handicap to good staff utilisation. The problem is that the lack of control over unspecified remission is combined with quite rigid class contact requirements. It is entirely possible that more time is required in many cases, for research and marketing in particular; but the present systems do not provide the necessary management control. The problem is likely to increase with the spread of new teaching methods (e.g. flexible learning) which will make it more difficult to retain a lecturer contact hour as a surrogate for the whole range of lecturing duties.

54. The Silver Book also provides for further remission to be given for other professional duties such as liaison work, course development and organisation, welfare, timetabling etc. Auditors found that remission was given on widely differing bases and that the average in colleges ranged from almost zero to 24% of all contract hours. *Exhibit 9* shows the average amount of remission observed by auditors at different colleges; the position for individual lecturers varies widely around these figures. It has been difficult to establish any general criteria for which remission is granted. The more common grounds found by auditors include: in-service training, travel between college sites, trade union duties, education administration, curriculum development, research, health and safety duties and YTS administration. Other examples included 'admissions, checking requisitions, stationery, departmental accounts, college administration and text books'.

Exhibit 9

REMISSION LEVELS

% Colleges Sampled (n = 67)



Source: Analysis of Auditors' Project Reports, 1985

55. Some LEAs allow 2% - 3% remission which is allocated specifically or across the board by the principal or heads of departments. In certain cases the LEA's own limits are not observed and serious losses result. A national figure cannot be calculated; but at one college alone, possible loss of teaching time costing £235,000 was identified because remission was not under full control. In another case, all the hours which could not be timetabled were treated as remission. In a third instance lecturers who automatically progressed from Grade II to Senior Lecturer were not normally required to undertake course administration work though they benefited from lower contact hours applicable to their grade; where they were required to undertake course administration they were allowed remission for it - unlike other Senior Lecturers whose promotion had been by the normal selection procedures. In some colleges most remission is given to senior staff who already have fewest contact hours.

56. While the amount of remission will vary between colleges, 4% would seem a reasonable level – as the exhibit shows, this is around the lower quartile performance for the sample of colleges examined by auditors last year – 28% of the sample had remission levels below 4%. It should be possible for educationalists to agree a general list of matters qualifying for remission, though there will no doubt always be some exceptional circumstances which must be left to principals' discretion.

57. Contact hours often include tea breaks. Their inclusion can be costly – £200,000 or more at a single college. In one college 'credits' were given for missed tea breaks which were in fact taken. At another, lecturers' tea breaks did not coincide with those for students. The national loss from the inclusion of tea breaks in contact hours cannot be quantified since it is a practice which, though widespread, is not universal. It is not unreasonable for 'tea breaks' to be charged against non-teaching time, thus providing more student opportunities.

The teaching year

58. The NJC agreement calls for academic staff to work 30 hours per week for 38 weeks a year. Thirty six of these weeks are 'teaching weeks' and contact hours set out in local agreements are applicable to every one of these weeks. Although the Silver Book allows for a degree of 'averaging', few agreements include it. Thus, if the contact hours are not put in in any one week they are lost for good or paid for at overtime rates. This is a matter which needs urgent review, wherever it is current practice. It also appears that most lecturers do not teach for 36 weeks a year, but rather for 30–33 weeks: In some instances auditors have observed lecturers routinely teaching for 29 weeks or less during an academic year. If the average loss is only three weeks, this would be the equivalent of the workload of over 7,000 lecturers costing over £100 million a year. Put another way, around 85,000 full-time students might be taught at no extra cost if there is a three week loss that could be made good. [Dealing with this problem would entail both increasing the weeks the college was open for education and providing for averaging of teaching contact hours; the effect of examinations on the last three weeks of the year in particular will also need to be taken into account].

Utilisation of available teaching hours

59. The teacher contract ratio (TCR) shows the extent to which lecturers provide the teaching hours to which they are committed by their local agreements. Among the colleges reviewed, TCR ranged from 0.71 to 0.99 (both include remission). Even allowing for remission, there is often scope for improving teacher utilisation by good timetabling and by monitoring course progress to ensure that teaching time is not wasted. Not infrequently, full-time lecturers are found to be working overtime or to have part-time teaching contracts at their own college whilst falling far short of providing their full-time hours. At one establishment locally agreed conditions of service prevented the adjustment of teachers' timetables after the end of October. Such an arrangement leaves little scope for flexibility.

60. Flexibility can be secured through use of part-time lecturers. Most establishments provide for a proportion of lecturing hours to be delivered by part-time teachers. This is sound practice. Specialist subject teaching can be acquired economically, every hour paid is a teaching hour. Of course, these advantages come at a price. Normally, part-time teachers play little or no part in curriculum design and development, marketing, counselling etc. Some LEAs prescribe the ratio of part-time to full-time teaching hours. It is commonly 20%–25%; the range was from 1%–38% in the colleges reviewed. In some cases the LEA's policy is not carried out. In one college this failure was costing £90,000 a year.

61. The number of hours per week spent in class clearly affects the use of resources. The decision as to the number of student hours necessary on a particular course is a matter for professional educational judgement; but too many student hours (i.e. over-teaching) is bad for both the student and resource costs. In some cases principals have agreed with the auditor that there might be a degree of over-teaching and have undertaken to review student hours. Certainly, high average student hours (ASH) always invite scrutiny. Courses that involve much over 24 class hours a week may well merit review. As Appendix A shows, there are several establishments where this is not uncommon. Table 13 shows the percentage of establishments where courses average 24 hours or more in formal classes every week.

Table 13: AVERAGE STUDENT HOURS/WEEK
Poolable Group One Courses
% establishments averaging 24 hours or more

Courses	Major FE colleges	Intermediate FE colleges
Group One	40%	85
Group Two	11	36
Group Three	41	81

In addition the length of apparently similar courses varies considerably. The MSC has observed that essentially the same course taking 18 weeks at one college takes as long as 26 weeks at another; and the colleges involved found it difficult to provide a rationale for the difference.

62. Despite the variation in performance, there are very many establishments doing as well or better than some fairly straightforward benchmarks. As the table shows:

Table 14: PERFORMANCE AGAINST 'BENCHMARK' STANDARDS
1984, Sample establishments only

	Good practice benchmarks	% Establishments exceeding benchmark
Retention rates	>87%	26%
Teacher contact ratio	>93%	39
Remission levels	< 4%	30

63. Auditors' experience during the past year suggests that successful establishments are doing most, if not all, of the following:

- There is an effective marketing programme to establish the nature of demand and to maximise the use of teaching resources. This also involves control of course initiation and maintenance.
- The institution is kept open for learning for 48 weeks of the year. This will necessarily entail some flexibility from lecturers in the way their 36 teaching weeks are deployed during the year. Some LEAs have negotiated changes to local conditions of service to enable an extended college year to be introduced, for particular courses.
- Full use is made of all 36 weeks for every lecturer. This means maintaining a review of lecturers' teaching commitments throughout the year. It may often be necessary to 'average' class contact hours, e.g. if a lecturer's locally agreed contact hours are 20 per week, he or she should achieve 720 hours over 36 weeks. Averaging enables shortfalls in one week to be balanced by extra teaching hours in others. St. Helens MBC is one LEA with such an agreement.

- Staffing needs are built up from an analysis of course hours. Some LEAs use formulae for this purpose. The formulae may be based upon policy decisions on SSRs, class sizes and the percentage of part-time staff to be employed. *Exhibit 10* illustrates a possible approach.

Exhibit 10

ILLUSTRATIVE

ADVISORY TEACHING STAFF ESTABLISHMENT FORMULA

1982 Actual Hours Calculations

Grade	Annual student attendance hours	Divisor	Annual teaching hours required	Distribu- tion of posts	Class hours of staff	Staffing required			
						PL	SL	LII	LI
II	409,203	: 10	= 4,0920.3	× PL 17.5% +	468	= 15.3	—	—	—
			= 4,0920.3	SL 41.5%	540	—	31.5	—	—
			= 4,0920.3	HSL 41.0%	540	—	—	31.1	—
IV	2,074,645	: 12	= 172,887.1	× SL 2.5% :	540	= —	8.0	—	—
			172,887.1	LII 52.5%	612	—	—	148.3	—
			172,887.1	LI 45.0%	720	—	—	—	108.1
V	1,396,333	: 15	= 93,088.7	SL 2.5% :	540	= —	4.3	—	—
			93,088.7	LII 20.0%	612	—	—	30.4	—
			93,088.7	LI 77.5%	720	—	—	—	100.2
Special Ed.*	73,592	: 10	= 7,349	SL 2.5% :	540	= —	0.3	—	—
			7,349	LII 20.0%	612	—	—	2.4	—
			7,349	LI 77.5%	720	—	—	—	7.9
Sub-totals						15.3	44.1	212.2	216.2
Proportions						3.14%	9.04%	43.5%	44.32%
Remission 4,522 hours by grade						141.85	408.81	1967.13	2004.2
Remission FTE posts						0.3	0.76	3.64	2.78
Sub-totals carried forward +						15.3	44.10	212.2	216.2
FTE establishment						15.6	44.86	215.84	218.48
25% part-time teaching hours —						3.9	11.21	53.96	54.62
Full-time posts						11.7	33.64	161.77	163.86
Advisory formula F.T. posts =						12	34	162	164

*Special Education assumed to be 5 per cent of Grade V hours across the College

- In designing course curricula the need to achieve maximum group sizes and minimum student taught hours commensurate with educational need, safety and other requirements is borne in mind.
- Remission is controlled by establishing clear guidelines for its application and departmental and college limits beyond which approval is required.
- Student attendances are monitored to ensure that group sizes are maintained; and teachers' timetables are kept under review so that class amalgamations and closures are taken into account and full use is made of teaching weeks when there are no classes.
- The criteria for automatic progression from Lecturer, Grade II to Senior Lecturer are strictly observed. A requirement for LEA approval ensures consistent treatment as between colleges.
- Extraneous activities, e.g. refreshment breaks, are excluded from class contact hours.

- There is a clear and comprehensive policy for staff development to ensure that student needs are properly met, that teaching practices are up to date and that the risk of lecturers' redundancy through obsolescent experience and knowledge is minimised.

64. Appendix B describes how one local education authority approached the problems of improving efficiency in further education, by applying these fairly straightforward principles with notable results. The case example is not an isolated instance. Management action can make a difference. For example, Wakefield District College has 2,300 full-time equivalent students, and was created four years ago out of the amalgamation of three colleges. It is one of only two colleges in areas of high youth unemployment which have well above average class size for Group One non-advanced courses. [The other college is Sheffield; and the recently published *Case Studies in Further Education* describes some of the efforts involved, including a co-ordinated venture by five colleges to retrain redundant steelworkers]. At Wakefield, all lecturers are expected to put in the following class contact hours:

Lecturer, Grade I	22 hours/week
Lecturer, Grade II	18
Senior Lecturer	15

Remission, which is controlled centrally, amounts to less than 2% of the total staff time. The College operates on the 48 week year, for MSC students who amount to around 40% of the total. There are advisory committees for all faculties, including local businessmen; and there is a liaison officer with the local schools; and the College is about to appoint a full-time marketing director. There is very strict control over courses; sub-optimal courses are not maintained. The retention rate overall is 96%; relevant exam results are better than in the local secondary schools and have improved steadily ever since the College was established. There is regular rotation of administrative responsibilities among senior management; this means that there is much less in-fighting and 'empire building'.

One result of all this effort is to improve the student/staff ratio from 8.9:1 to 14:1 in three years.

BETTER COST RECOVERY

65. Any enterprise, whether commercial or part of the public service, must ensure that bills are promptly rendered and followed up efficiently. *Education: Polytechnic Expenditure*, published by the Audit Inspectorate in March 1983, discussed some of the problems (and opportunities) involved. The Audit Guide included in that report is reproduced here, as Appendix C, for those LEAs that wish to launch reviews of those further education establishments not covered in the last audit round. Auditors' enquiries last year confirmed that the weaknesses diagnosed three years ago are still regrettably widespread: poor management information and insufficient attention to the cost recovery.

Meeting information needs

66. The first essential to recovering costs is sound management information: if a college is unaware of what costs are incurred, it is unlikely to recover them. Over the last few years, there has been a growing awareness of this need. But the overall impression from auditors' reports is that there is still much to be done. In a few instances, auditors were unable to make a judgement on the use of resources because there was no useful management information. In others, the information was of poor quality and considered to be unreliable. For example, in one college the auditor observed that 28% of the total of full-time registered students were not recorded in the course registers. The auditors often used the college's Monitoring Survey Return to the Department of Education or the Burnham points calculation as starting points for their review. Errors were found to be common and in

some instances the returns could not be used for this reason. In one case the survey return was so obviously incorrect that it had been rejected by the DES.

67. Inaccurate information can lead to serious losses. Several instances were brought to notice both by auditors and LEAs themselves where omissions from the Further Education Statistical Return had led to loss of rate support grant. At one college the loss amounted to £350,000.

68. In an effort to improve management information (and thus control) in colleges, the DES sponsored the development of a Further Education Management Information System (FEMIS). FEMIS has some limitations, the most significant of which are the absence of provision for actual data relating to students' attendance and lecturing hours and its reliance on unverified teachers' timetables for input. Nevertheless, it represents a valuable and important step forward in promoting the use of management information. From early 1985, FEMIS has had a cost module available which permits unit costs to be calculated for cost centres down to individual lecturers and courses. However, only a minority of establishments have yet purchased FEMIS or comparable commercial alternatives. This is disappointing. A number of establishments have their own systems, including facilities for handling data and making projections; but many colleges either have no management information systems or rely on manually produced data which is usually limited and often unreliable.

69. Whatever management information system is in use, it has little or no value unless it is based upon soundly monitored prime records whether these be registers or teachers' timetables, or both. This requires a discipline which is very often lacking. Some LEAs are making efforts to redress this by training college staff to recognise the importance of accurate records and the use that is made of them; they have improved register systems so that information necessary for internal management purposes and the provision of returns to the DES or the LEA can be readily and accurately provided.

70. There is no shortage of published advice. The Audit Inspectorate published a report on this subject in 1983, *Registers and Control Information in Colleges of Further Education*. The Chartered Institute of Public Finance and Accountancy (CIPFA) has published a report *Financial Information System for Institutions of Higher and Further Education in the Maintained Sector* which describes a system for relating expenditure to departments or course units. However, as with FEMIS, there is little evidence from the audit reviews that this system is being widely adopted as yet or that the Education Support Grant available for new information technology has been taken up.

71. All LEAs should therefore take steps to ensure that their further education establishments have a management information system in place that meets the following basic requirements:

- (a) It should provide information as to: the numbers of students and lecturers, the hours for which they meet in a learning situation and the cost of the education provided.
- (b) The units of measurement should be commonly agreed and consistently calculated; comparisons should be possible between actual volumes or events and those planned.
- (c) It should provide management at each level with appropriate information to assist in monitoring events throughout the year.
- (d) The system should provide information about outcomes, e.g. participation and retention rates, course completions, examination successes and (where this is appropriate) the subsequent progression of students into relevant employment, as well as resource utilisation.

- (e) Where, as is likely at present, separate systems are in use for different aspects of management information, these should be reconcilable. Problems often arise because the academic year starts four months after the financial year and there are differences in the method of calculation of full-time equivalent students for various purposes. The calculations of the latter for the Further Education Statistical Record (FESR) and for the Pooling Committee's Monitoring Report are based upon differing criteria and inevitably produce differing results. Indeed, the derived value of a full-time student for the pooling survey is different for each institution and for each pooling group within an institution, as is the value of an FTE lecturer. The reservations of some academics as to the value of management information rest upon those anomalies. Clearly, they cannot be removed overnight; but it must be worthwhile at least to seek a common definition for a full-time student.

72. Obvious as it may sound, management information is not an end in itself but a means of securing tighter managerial accountability and thus better control over the use of scarce resources. No manager can be held responsible for controlling activities, resources and results about which he is not properly informed. The Audit Inspectorate's reports drew attention to the absence of a clear chain of command in further education – particularly in the relationship between college and LEA. College principals need to have policies, strategies, aims and budgets clearly understood and agreed with the LEA. The principal should be accountable for achieving satisfactory results within the budget and within the constraints imposed by external pressures (e.g. Burnham, the Silver Book and the requirements of sponsors and validating bodies). Sometimes, the constraints imposed by the local authority may unnecessarily hinder principals' ability to manage. For example, they may not be able to put on a course that is needed because the LEA has restricted the type of courses to be run. Or they may find it easier to use a lecturer for administrative duties than to obtain authority from the LEA to recruit a clerk.

Management action

73. A recurring theme in the audit reviews of polytechnics and colleges has been the failure to bill promptly and completely and subsequently to take action to recover outstanding debts (including recoupment charges). In many cases these failures are attributed to staff shortages at busy times (e.g. during the autumn enrolment season). However:

- Instances were found where billing was still incomplete at the end of the financial year and where follow up has been delayed beyond hope of recovery. Even in an otherwise well-managed college, the delay in sending out bills for tuition fees was over 50 days from enrolment (in the same college the delay in billing exam fees was only 20 days). The loss of both income and interest is such that it may often be worthwhile to engage temporary or agency staff to assist in the billing process. Interest lost at one large college alone was calculated at £70,000 per annum, a sum sufficient to provide education to between 40 and 50 more students. At another college £73,000 in annual interest charges was saved when management tightened up billing procedures.
- In some cases students were attending courses without having paid their fees long after the bills have been sent out – without any explicit decision by the LEA to waive the fees. At others it was not always clear from the records whether students had paid or not.
- Some LEAs stated there had been problems in recovering monies

due from the MSC. A member of the Commission's staff visited the MSC to discuss the problems. It was found that authorities varied in the promptness with which they rendered accounts and in their observance of the guidance provided by the MSC. On the other hand one education officer consulted by the Commission had found no difficulties after the initial round of accounts. The MSC suggested that the college staff were frequently better able to deal with area managers' of their education authority and that finance departments did not always understand the schemes and procedures involved. [The Commission understands that the MSC is exploring procedures which will enable the local authorities' cash flow to be improved, e.g. by monthly payments].

- Some LEAs 'held back' invoices towards the end of a financial year to ensure that the money was received in the following year. This was to ensure that the income was not 'lost' to further education. One polytechnic had persuaded the LEA to set up a separate bank account so that balances may be carried forward. Another college had as much as £2 million outstanding, but unbilled, from the MSC for almost four years.

74. For 'economic cost' courses the twin considerations must be to recover the likely expenditure on them and to ensure that their provision does not conflict with more pressing educational needs. For self-financing PICKUP courses which fulfil an important educational need, principals should not discourage development of courses because of their possible effect upon the overall student/staff ratio (SSR) or the college. Rather, these courses should be removed from the reckoning when calculating SSRs and other management ratios; they should be evaluated using other yardsticks aimed at judging their cost-effectiveness and evaluating the extent to which they meet employers' needs. These courses would normally be expected to appear in the electronic directory of PICKUP courses.

75. Research and consultancy work should also be the subject of proper control to ensure that its extent is known and that the establishment benefits from the use of staff time, premises and equipment. Auditors found that this was not always the case and confirmed the finding of the Audit Inspectorate *Study of Six Polytechnics* in 1982. Table 15 below reproduces the information from that study on the income from externally financed research in six different polytechnics. It will be seen that the amount of externally funded research varied by a factor of three; and that the type of research project also varied substantially. The average size of project varied from around £2,000 to over £10,000.

Table 15: EXTERNALLY FINANCED RESEARCH
1980-81, £000 - selected polytechnics

	A	B	C	D	E	F
Source of funding						
Research Council	31	172	60	-	45	91
Public corporations	77	-	-	-	7	24
Private companies	106	-	21	-	3	28
Other	-	14	91	-	20	53
Total income	214	186	172	-	75	196
[Memo; number of projects]	not known	22	15	-	39	48]

76. Equipment and consumables, too, merit close examination. As *Exhibit 11* shows, the cost per student in similar establishments can vary by a factor of 2 or more. Some establishments are evidently more successful than others in keeping their costs under control. The audit reviews suggest that several steps are worth considering:

- HM Inspector refers to the practice at many colleges of supplementing their resources by charging students a levy for materials, by asking them or their employers to provide materials and equipment or by obtaining surplus materials from local firms. It may be that in many cases employers anxious to ensure the adequate training of their employees, would be prepared to provide capital equipment or allow the use of equipment in their premises.
- In many instances auditors recommended the institution of a fines system in college libraries and/or the requirement of a deposit for expensive books and equipment. Control of books is also not as rigorous as it could and should be; the library stock at a large college may be worth £1 million-2 million. Auditors frequently reported a lack of stock taking or stock taking which revealed substantial losses. A sample check in one college revealed that 20% of library books were missing.
- The Council of Local Education Authorities issued guidelines in 1980 which stated that with the exception of certain costs (debt charges, rates etc.) catering facilities should break even. Many LEAs require observance of the guidelines; but these are not always met and auditors have drawn attention to this in several instances. Losses on catering operations of £10,000-15,000 a year are not uncommon. The failure may arise from inefficiency, from lack of price review or both. A more fundamental point raised was the need for a review of facilities in the light of a growing trend to self-catering by students.
- However, many examples of good practice were noted. Some establishments offer fast food services with disposable utensils and using casual staff to meet peak demands. Some refectories are able to supply a service beyond the college population. For example, both function room and catering may be made available for weddings and other private and public events. Similar considerations apply to residential accommodation where some polytechnics and colleges seek users for vacation capacity and secure a useful contribution to further education funds.

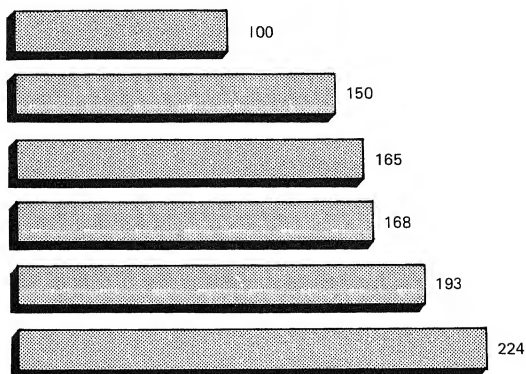
CONTROLLING NON-TEACHING COSTS

77. Non-teaching costs usually account for not far short of 40% of the total costs of an establishment, although as *Exhibit 12* shows, the cost per student varies considerably between establishments. Part of the difference is of course explained by factors outside management control such as multi-site operation, mix of courses and terms and conditions of service (e.g. grading and London weighting). Two management ratios were used by auditors to provide an early indication as to whether non-teaching costs in a particular establishment warranted detailed enquiry:

- (a) The attendance hours (including overtime) of academic staff divided by the attendance hours for all staff. This ratio is known as the academic/administrative hours balance (AAHB).
- (b) The full costs of academic staff divided by total staff costs. The resulting ratio is described as the academic/administrative cost balance (AACB).

**EQUIPMENT AND CONSUMABLES COSTS
IN SIX POLYTECHNICS**

£/Student; Index: Lowest cost = 100

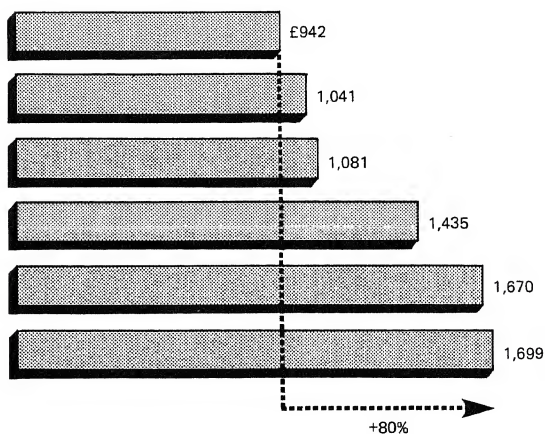


Source: Polytechnic Expenditure, Audit Inspectorate March 1983

Exhibit 12

NON-TEACHING COSTS IN SIX POLYTECHNICS

£/Student, 1980/81

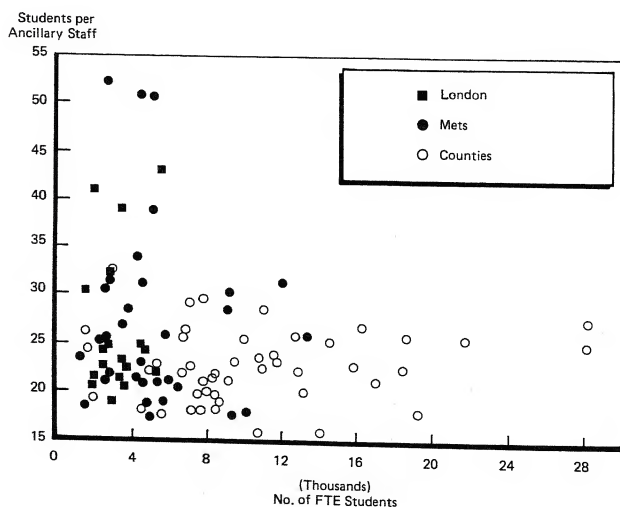


Source: Polytechnic Expenditure, Audit Inspectorate March 1983

78. These indicators are obviously very crude – providing at best a ‘feel’ for whether there are problems that need to be examined in detail. Comparisons of the ratios with national patterns, with similar colleges and over time have been helpful in targeting particular cost areas within a college for detailed review. The range of performances is remarkably wide: The academic/administrative hours balance (AAHB) ranged from 0.48 to 0.88 (i.e. academic staff time accounted for 48% to 88% of the total). The academic/administrative cost balance (AACB) varied between 0.70 and 0.90. (i.e. 70%–90% of non-manual employee cost was attributable to academic staff). Surprisingly there appear to be few scale economies; indeed, as *Exhibit 13* shows, if anything administrative staffing relative to students enrolled tends to *increase* with the size of college.

Exhibit 13

ADMINISTRATIVE SCALE ECONOMIES IN FE ESTABLISHMENTS
Major FE Colleges, 1984/85 Estimates



79. Too high a balance may hide the loss of teaching time in undertaking administrative duties. In his report, HM Inspector considered the provision of non-teaching staff to be ‘satisfactory or better’ in 60% of LEAs but that 20% of all institutions visited had inadequate numbers of non-lecturing staff. At one college, lecturers working 30 hours a week for 38 weeks a year were employed on tasks normally carried out by administrative and clerical staff; the latter who would have been available for 37 hours a week, 46 weeks a year, at lower cost. In such cases the opportunity cost may be well in excess of differences in pay and working hours. Support staff at one college are now being engaged on 40 week year contracts with proportionate salaries, to avoid unutilised time.

80. Cleaning costs also featured regularly in auditors' reports. No college audited appeared to have achieved anything like the 33 square metres per hour mentioned in the Commission's report on *Aspects of Non-Teaching Costs in Secondary Schools* at the time of the auditor's visit. However, one local authority has reached agreement with employees for a scheme which stipulated 38 square metres per hour for classroom areas. Several other authorities have since been in touch with that LEA. Some LEAs have achieved worthwhile savings by contracting out cleaning services without any noticeable reduction in the quality of service.

81. The unnecessary maintenance of under-used premises can also be a source of financial loss. Much research has been undertaken on space utilisation – notably by Dr Grace Kenny of the Department of Education and Science. The Further Education Management Information System (FEMIS) now has a module on sale which measures space utilisation in line with Design Note No. 37. Many colleges do not know how well their space is utilised. A room utilisation level of 80% and a seat occupancy of 80% should both be possible, producing a space utilisation of 64%. At one college utilisation of workshops was found to be only 23%, although 77% was achieved in the rest of the college. Another LEA has been asked to consider the amalgamation of three colleges, to improve space utilisation. In a third, the maintenance organisation at a polytechnic was found to have very low productivity when compared with a neighbouring authority's direct labour organisation. Opportunities for improving productivity by 50% were identified – with a potential saving of £200,000 a year.

82. A separate review of local authority purchasing arrangements was undertaken by auditors and a progress report has already been published by the Commission*. The matters raised in that report are applicable to polytechnics and colleges. A frequent finding was that a college did not always use the local authority's purchasing system where that would have been advantageous. The Commission will be publishing a further report recommending steps to improve local authority purchasing arrangements later in 1985.

83. Finally, around 70% of local government energy costs are incurred in educational buildings. Since the total expenditure on energy by local authorities is estimated at £1 billion, the positive management of energy is very important. This, too, will be the subject of a report by the Commission later in 1985; and it will be the subject of special reviews by auditors in 1986. In their recent projects auditors reported several instances where energy costs appeared to be higher than expected. Among the recommendations made were: energy consumption should be monitored properly, steps should be taken to conserve energy and a change from one fuel source to another should be considered. Polytechnics and colleges have high rateable values which often form the bases of water charges. Where water consumption is not unusually high, it may be less expensive to pay for metered supplies rather than charges based upon rateable values. This is particularly important in the light of likely increases in the level of water charges.

* * *

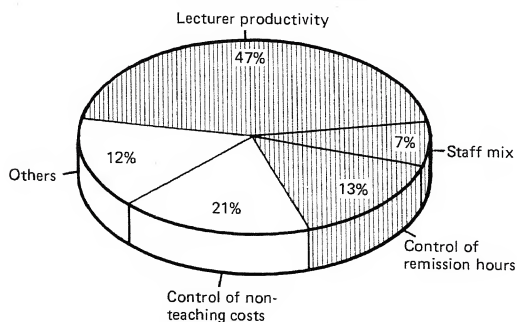
* *Reducing the Cost of Local Government Purchases*, HMSO July 1984, price £5.00.

84. The scale of the opportunities available for achieving better value within further education revealed by auditors' investigations last year is considerable. Analysis of the specific opportunities now being followed up at the local level by principals and LEAs suggests that improvements worth around £300,000 a year per college are available – a respectable return on a value for money project costing the authority concerned well under £15,000 in most cases. *Exhibit 14* shows where these opportunities are concentrated. It is of course no business of the auditor, still less of the Commission, how the potential is used. In many cases there will no doubt be scope for worthwhile expansion of services to achieve more educational 'value' at current cost levels.

The final chapter of this report describes in more detail what the Commission and its auditors will be doing to ensure that these opportunities are grasped and suggests some of the next steps for local educational authorities and for those involved in formulating national policy in this field.

Exhibit 14

VALUE IMPROVEMENT OPPORTUNITIES



Source: Analysis of Auditors' Reports, 1985

3 Next steps

85. This document is a progress report. The audit reviews carried out last year only covered one college in three; and the auditors, naturally, assumed no changes in the existing Burnham and Silver Book agreements covering the terms and conditions of services for lecturers. However, there is the possibility that changes in terms and conditions will be discussed in the forthcoming round of negotiations within the Burnham Further Education Committee and the National Joint Council (NJC). This chapter therefore summarises the Commission's views on the appropriate next steps for auditors, local education authorities and the national negotiating bodies.

86. *Auditors'* primary responsibility in this, as in the other value for money projects carried out last year, will be to see that agreed changes are implemented on time and with the expected results. Altogether some 1,600 separate projects were carried out in the last audit round. Implementation progress on each is being monitored separately. Every six months, when they visit authorities, auditors are checking to ensure that the agreed action programme is on target. The auditors can be expected to issue reports in the public interest if there is any unwarranted delay in moving ahead along the agreed lines, or if the anticipated results are not being achieved. A total of 110 further education projects is being tracked in this way. [In the remaining 55 colleges, specific action programmes have not yet been agreed]. The results will, of course, be reported in the Commission's next *Annual Report* as well as to the LEAs concerned.

87. *Local education authorities* and the governing bodies of individual establishments face the difficult task of implementing the changes that have been agreed as a result of the local value for money projects. It is unrealistic to expect instant progress, particularly if staffing changes are required. However, within, say, three years most if not all of the agreed steps should have been taken – provided always that there is a good working relationship between the authority on the one hand and the principal and governing body on the other. With sound manpower planning and effective re-training programmes, it should be quite possible in most establishments to accommodate any likely staffing changes without the need for compulsory redundancies. Every year, around 4,500 full-time equivalent lecturers leave the national lecturing force – usually on retirement, or for personal reasons. This figure has remained remarkably constant, at just over 5% of the total lecturer force, during the period 1978–79 to 1982–83 [the latest year for which information is available].

88. In addition to implementing the changes arising from the value for money projects, the Commission expects that LEAs will want to extend the review programme to cover other establishments where the key management ratios – average class size, student/staff ratio, average lecturer hours and retention rates – suggest that there are grounds for concern. The table below provides, for selected performance indicators, the Commission's views on the attainable standards and suggests the level of performance that should give cause for concern.

Table 16: SELECTED FE PERFORMANCE INDICATORS

	Attainable standard	Cause for concern
Average class size	13-15	<12
Student staff ratio	11-12	< 9
Average lecturer hours	16-18	<14
Overall retention rate	85-90%	<84%
Part-time staffing	20-25%	<15%
Average remission	3- 4%	> 5%

89. In addition, the Commission expects that LEAs will ensure that systems are in place to see that the Pilkington guidelines on class size for new courses are adhered to and that the teaching year is tailored to the needs of the local market.

90. Finally the *Burnham Further Education Committee* and the *NJC* are responsible for negotiating any changes in lecturers' terms and conditions of service. It would clearly be inappropriate for the Commission to suggest specific changes in the present arrangements – these must be agreed between the parties represented on the Committee and Council respectively. However, the audit reviews suggest some problems that could be addressed with advantage:

- (a) The principle that the more senior lecturers must spend less time teaching than their less experienced colleagues appears questionable from the standpoint both of students and LEA alike. This is particularly the case when demanding new courses are being mounted.
- (b) The lack of flexibility resulting from the very detailed (even mechanistic) arrangements for defining staffing levels and grades can be damaging. It makes it more difficult for colleges to develop and react to new market opportunities; it makes it less easy (if not impossible in some cases) to tailor staffing to reflect the talents and experience of individual lecturers and the needs of particular courses and students; and colleges are less well equipped than they need to be to exploit the potentialities of technological changes – associated, for example, with open and distance learning. Several commentators have suggested that the process of counting student hours may even encourage over-teaching.
- (c) The appearance of restrictive practices in the present terms and conditions can only be damaging to the public standing of the further education service. Moreover, if the following practices are at all widespread, the cost to LEAs (and the opportunity cost to students) will be high:
 - Lack of minimum class contact hours for lecturers, to complement the maxima now embodied in the agreements.
 - Absence of an agreed list of those activities for which remission from agreed class contact hours can legitimately be granted.
 - Teaching years which do not reflect the needs of the market, or the nominal academic year for the college.
 - Timetabling arrangements which permit lecturers to claim over-time payments even though they have not met their contractual hours for the year as a whole.

91. The audit reviews carried out last year suggest that these problems need urgent attention in the interest of the further education service and those it exists to serve as well as the tax and ratepayers who meet the cost involved.

KEY ACADEMIC STAFFING RATIOS

1. This appendix shows the results of the analysis of the 1984 monitoring reports. Four ratios are examined in turn:

- Student/staff ratio (SSR). This is the ratio of full-time equivalent students to full-time equivalent lecturers.
- Average class size (ACS). This is calculated by dividing total student taught hours by total lecturer class contact hours, for the courses in question.
- Average lecturer hours (ALH). These are calculated by dividing total lecturer class contact hours by the number of (full-time equivalent) lecturers.
- Average student hours (ASH). This is a product of dividing student hours provided for full-time courses by the number of (full-time equivalent) students.

2. The ratios are shown separately for polytechnics, major further education (FE) colleges, intermediate FE colleges, minor FE colleges, colleges of art and design and Welsh FE colleges.

3. Since the ratios will differ by type of course, the analysis identifies poolable (usually advanced) and non-poolable (usually non-advanced) courses separately and also shows the results for the different groups of courses. Table A-1 shows the courses in each category:

Table A-1: GROUPS OF FE COURSES

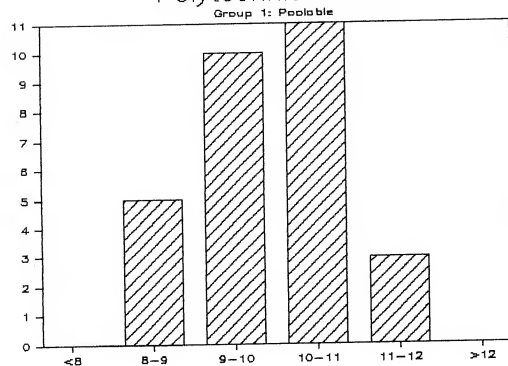
GROUP 1		GROUP 2	GROUP 3
Laboratory/workshop based		Classroom based	Art and design
Medicine	Agriculture, forestry and veterinary studies	Education	Art (including combination of art and design)
Dentistry	Forestry and veterinary subjects	General education	Design
Pharmacy/pharmacology	Science and applied science	Mathematics	Drama
Ancillary health	Computing	Other business and commerce	Music
Aeronautical engineering	Physics (including applied physics)	Secretarial studies (company)	
Chemical engineering	Environmental sciences	Secretarial studies (office)	
Chemical technology	Biological with physical sciences	Economics	
Fuel technology	Management and management science	Geography	
Civil engineering	Architecture and town planning	Accountancy, banking and insurance	
Building	Nautical science	Government and public administration	
Electrical and electronic engineering	Transport	Law	
Mechanical engineering		Psychology	
Agricultural engineering		Sociology	
Automobile engineering		Other social studies	
Machine engineering		Catering and institutional management	
Naval architecture and shipbuilding		Home economics	
Production engineering		Other professional and vocational subjects	
Mining and quarrying		Librarianship	
Metal technology		Wholesale and retail trades	
General and other engineering		Language, literature and related area studies	
Surveying		History	
General technology and manufacture		Archaeology	
Clothing and footwear		Philosophy	
Food technology and manufacture		Theology	
Printing and book production		Arts general	
Textile technology and manufacture			

4. The graphs that follow show the distribution for different types of course and FE establishments for the key ratios: SSR, ACS, ALH and ASH. For completeness and convenience some other management ratios are summarised below:

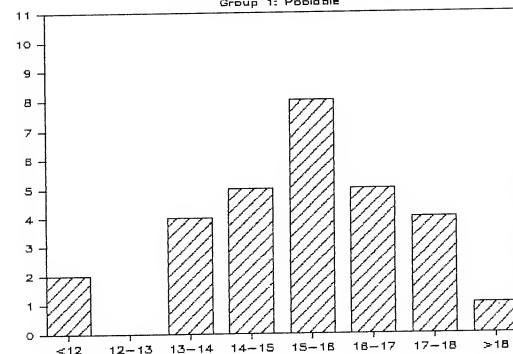
Table A-2: SELECTED FE MANAGEMENT RATIOS

	Lower quartile	Median	Upper quartile
Teacher contract ratio (TCR)	.86	.93	.95
Teacher attendance ratio (TAR)	.81	.91	.95
Remission (%)	3.1%	4.8	6.3
Students attendance ratio (SAR)	.73	.78	.83
Students retention rate (SRR)			
- overall (%)	80%	84	88
- full-time	89	90	91
- part-time	63	75	86
Part-time staffing (%)	14%	20	25
Academic/admin hours balance (AAHB)	.64	.68	.71
Academic/admin cost balance (AACB)	.83	.84	.86

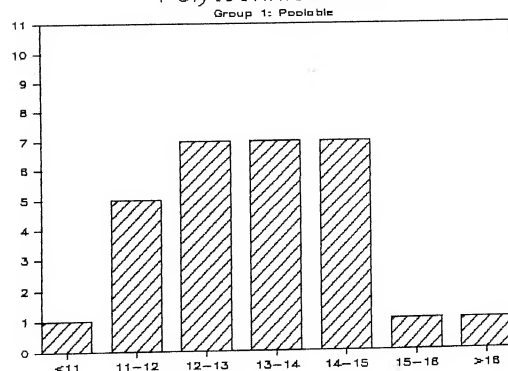
Polytechnics: SSR



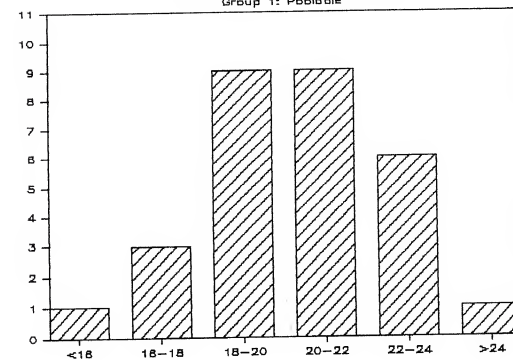
Polytechnics: ACS



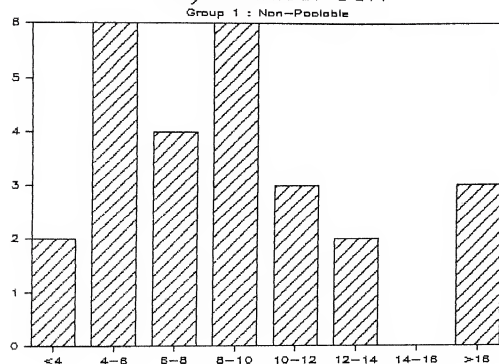
Polytechnics: ALH



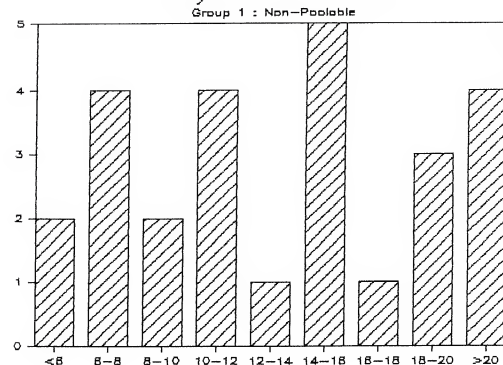
Polytechnics: ASH



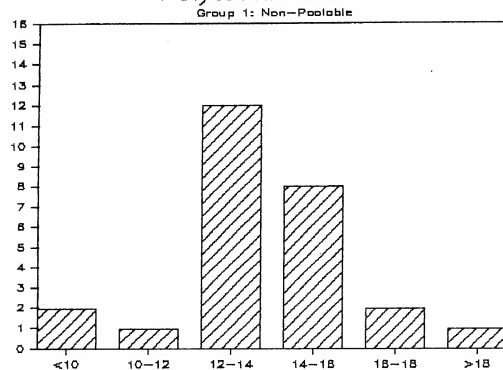
Polytechnics: SSR



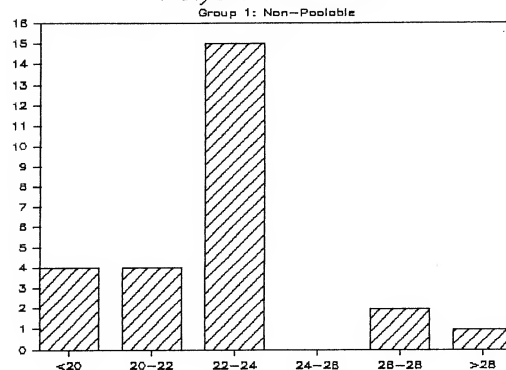
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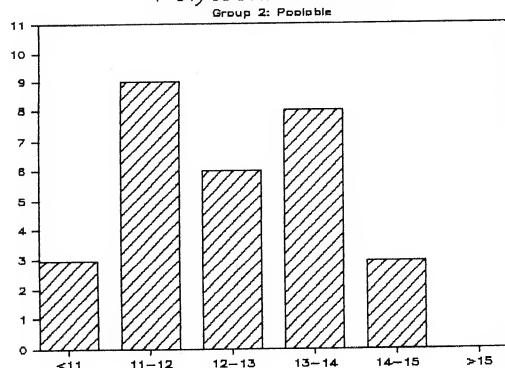
Polytechnics: ALH



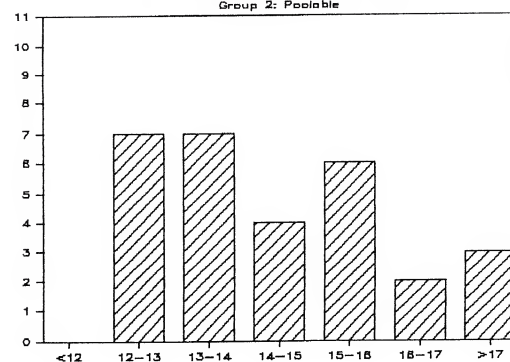
Polytechnics: ASH



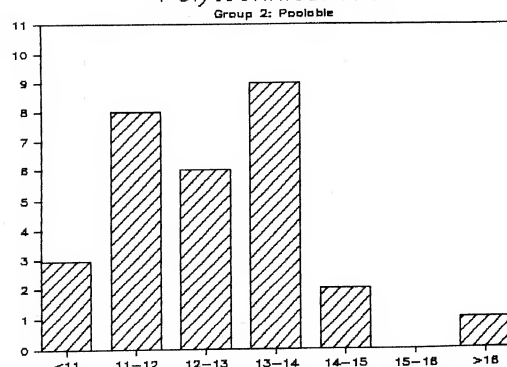
Polytechnics: SSR



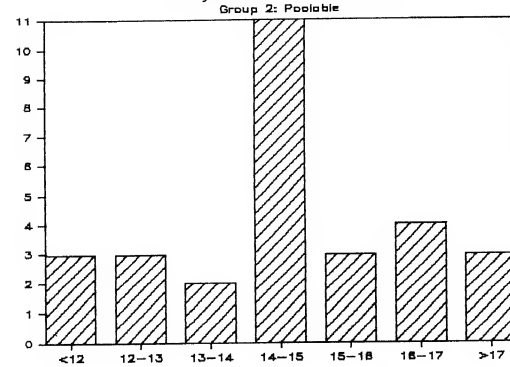
Polytechnics: ACS



Polytechnics: ALH

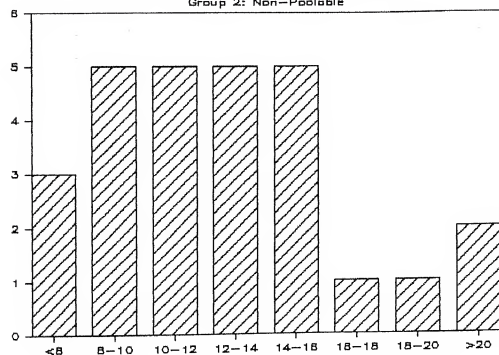


Polytechnics: ASH



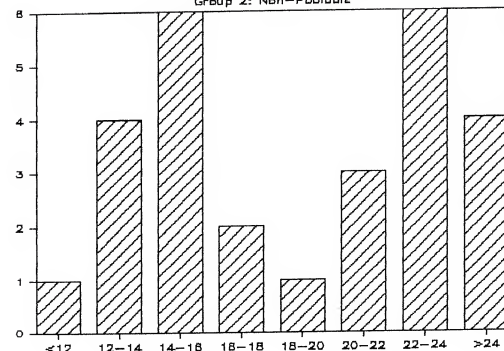
Polytechnics: SSR

Group 2: Non-Poolable



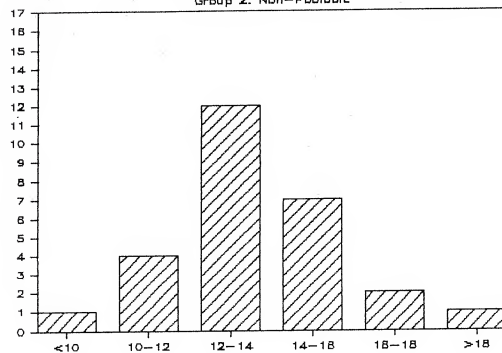
Polytechnics: ACS

Group 2: Non-Poolable



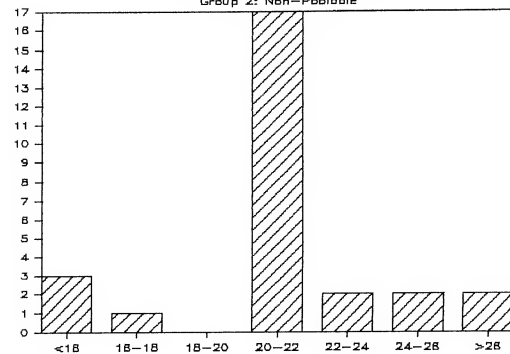
Polytechnics: ALH

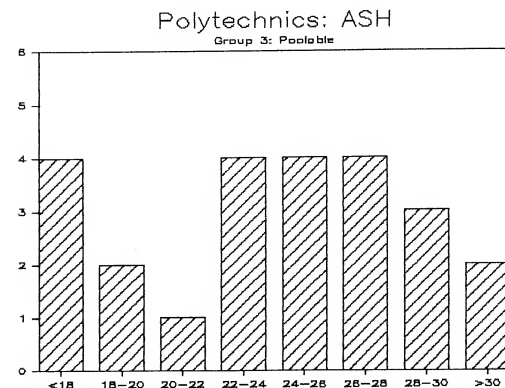
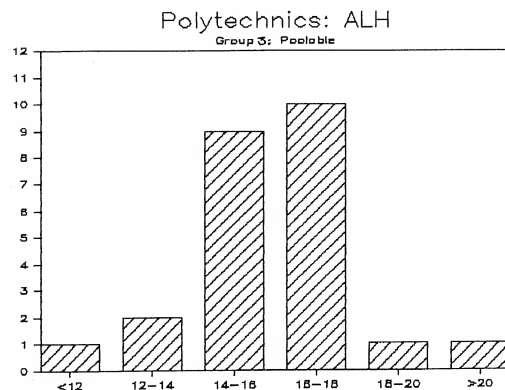
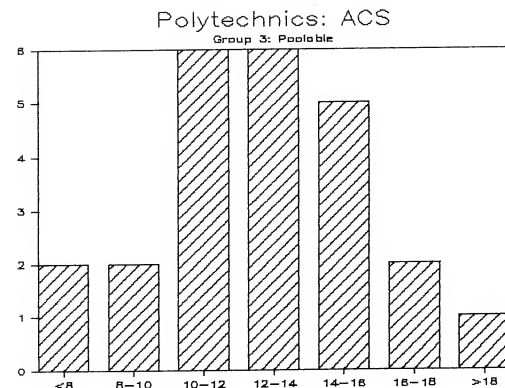
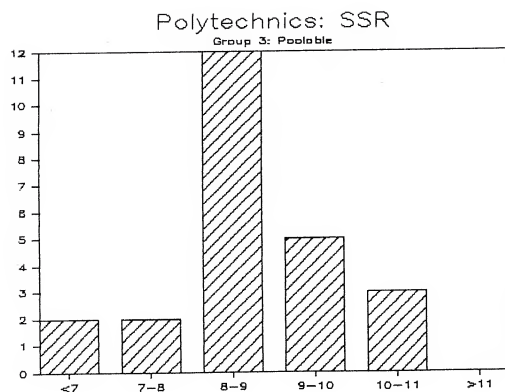
Group 2: Non-Poolable



Polytechnics: ASH

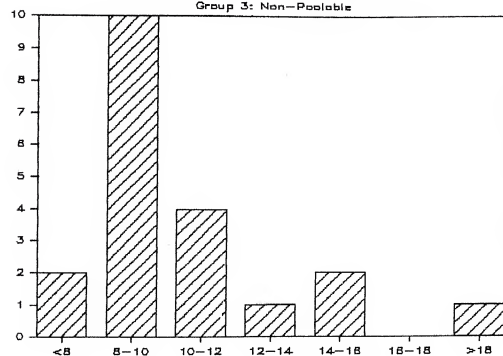
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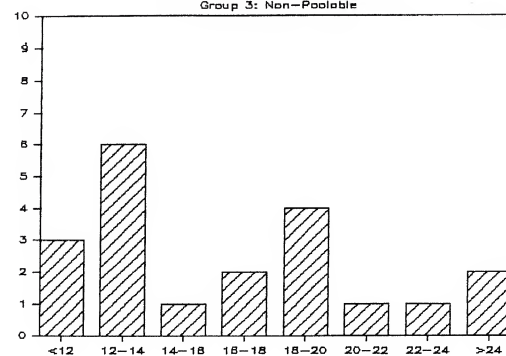
Polytechnics: SSR

Group 3: Non-Poolable



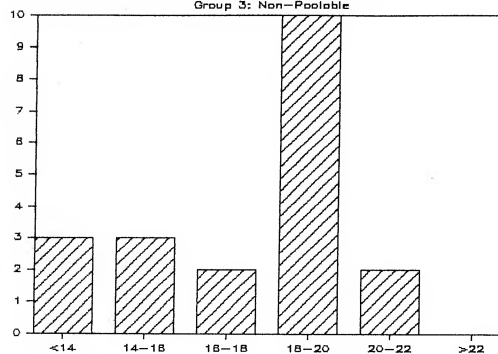
Polytechnics: ACS

Group 3: Non-Poolable



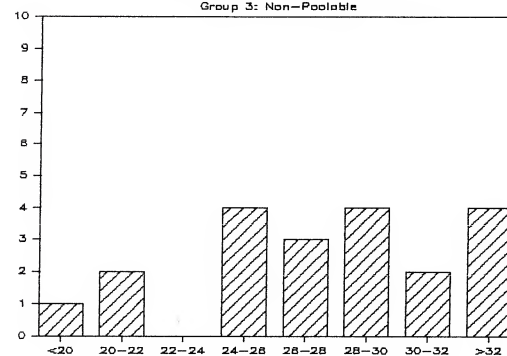
Polytechnics: ALH

Group 3: Non-Poolable

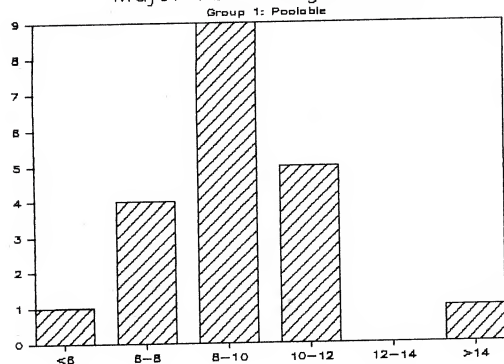


Polytechnics: ASH

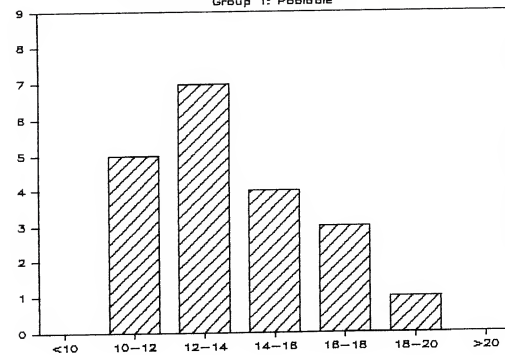
Group 3: Non-Poolable



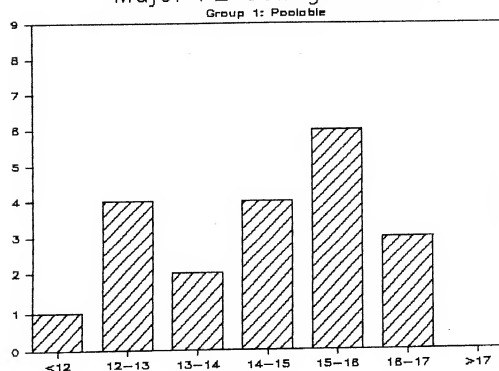
Major FE Colleges: SSR



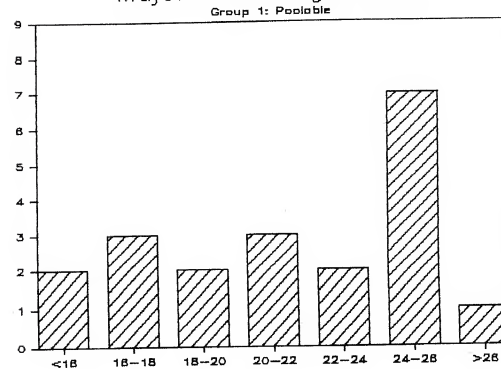
Major FE Colleges: ACS



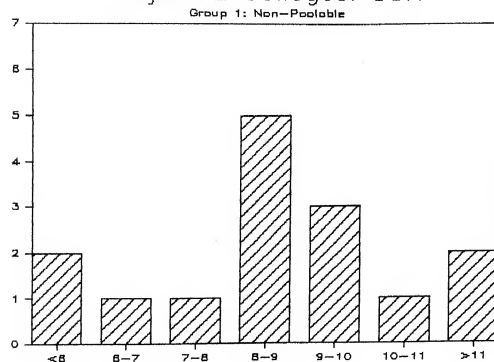
Major FE Colleges: ALH



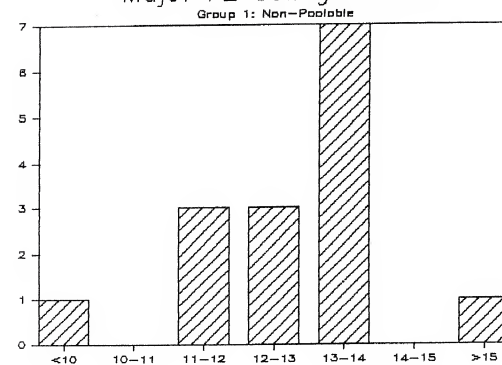
Major FE Colleges: ASH



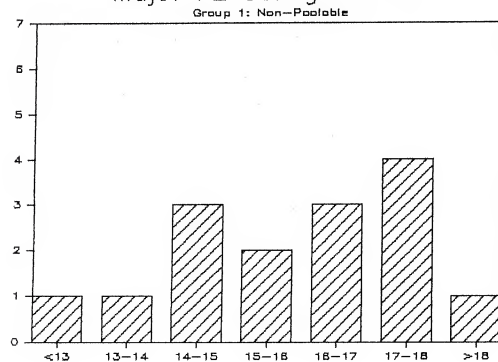
Major FE Colleges: SSR



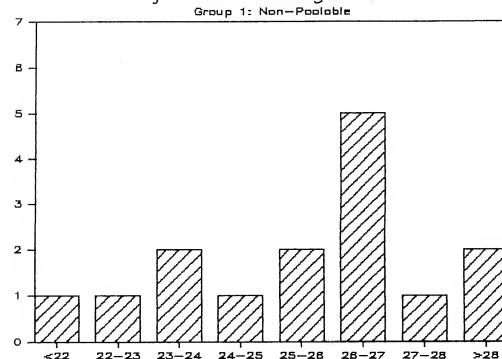
Major FE Colleges: ACS



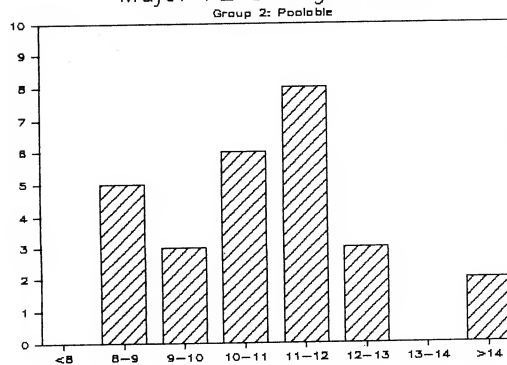
Major FE Colleges : ALH



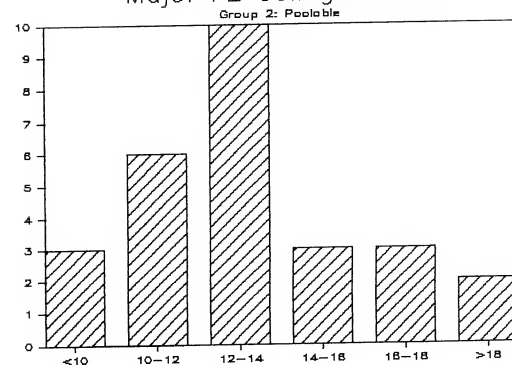
Major FE Colleges: ASH



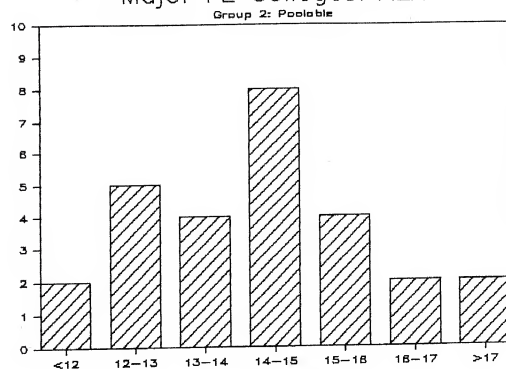
Major FE Colleges: SSR



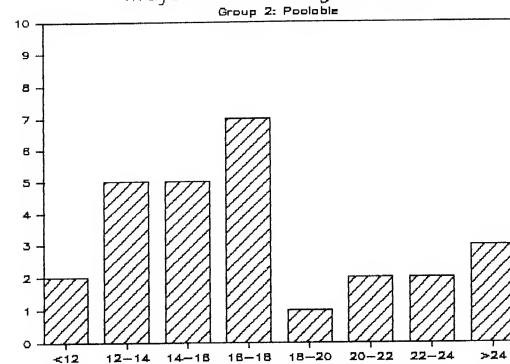
Major FE Colleges: ACS



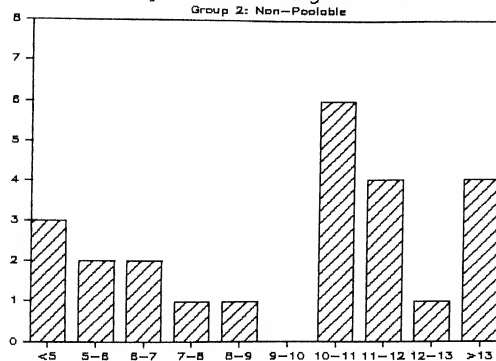
Major FE Colleges: ALH



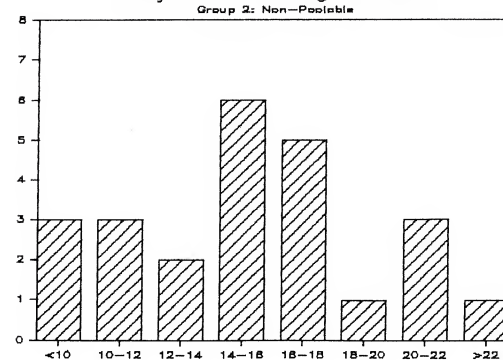
Major FE Colleges: ASH



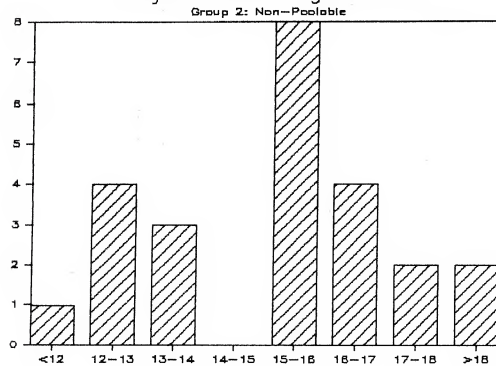
Major FE Colleges: SSR



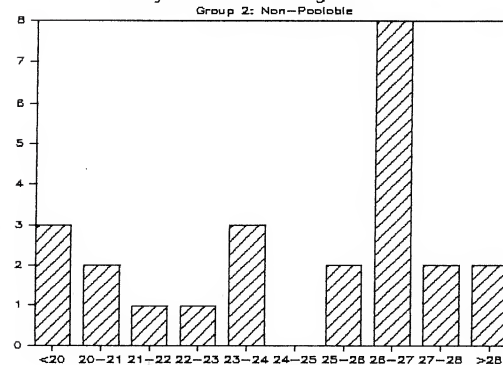
Major FE Colleges: ACS



Major FE Colleges: ALH

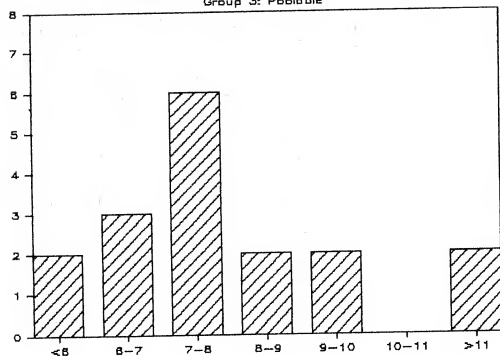


Major FE Colleges: ASH



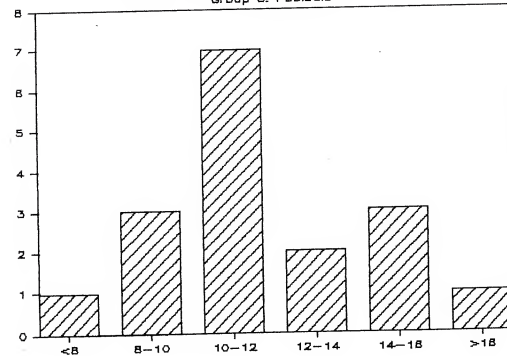
Major FE Colleges: SSR

Group 3: Poolable



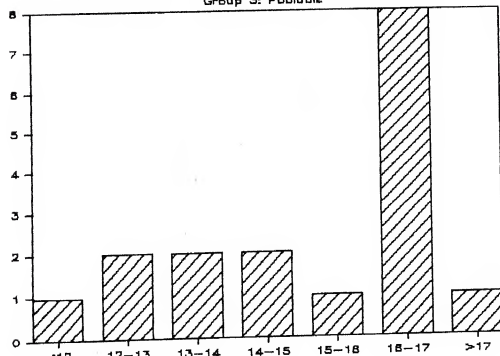
Major FE Colleges: ACS

Group 3: Poolable



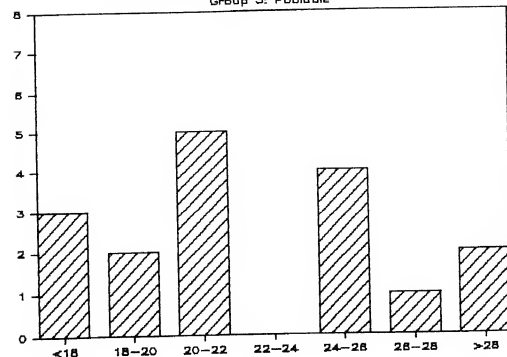
Major FE Colleges: ALH

Group 3: Poolable



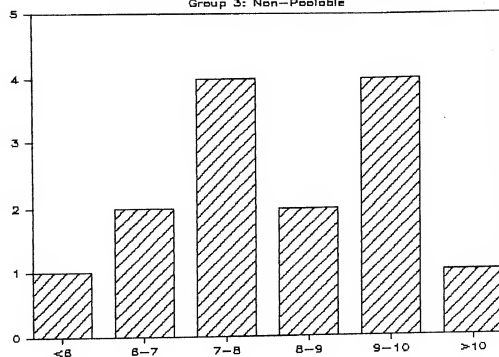
Major FE Colleges: ASH

Group 3: Poolable



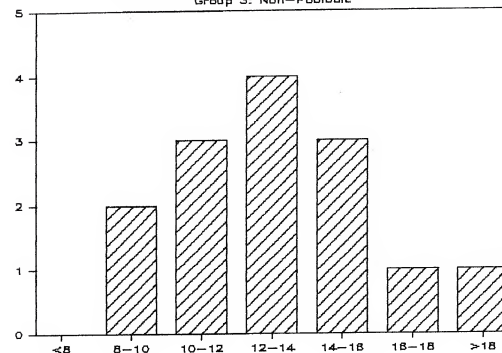
Major FE Colleges: SSR

Group 3: Non-Poolable



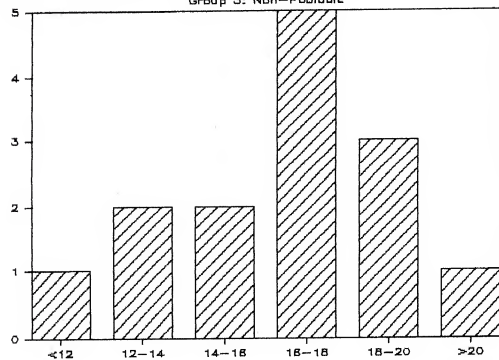
Major FE Colleges: ACS

Group 3: Non-Poolable



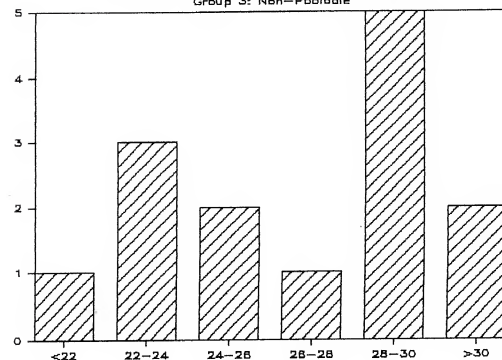
Major FE Colleges: ALH

Group 3: Non-Poolable

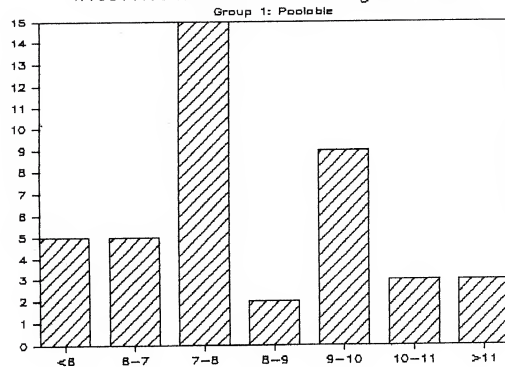


Major FE Colleges: ASH

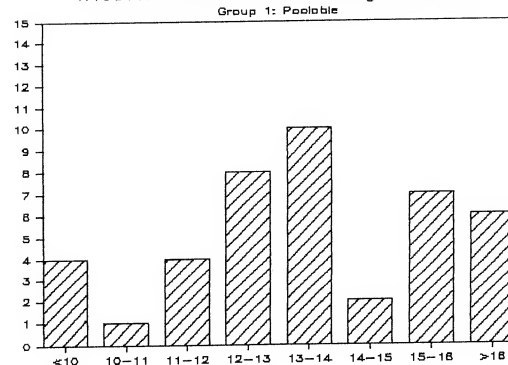
Group 3: Non-Poolable



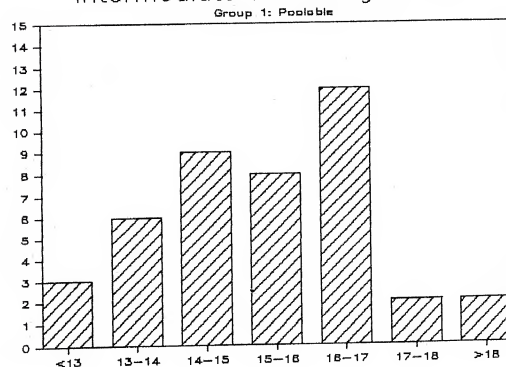
Intermediate FE Colleges: SSR



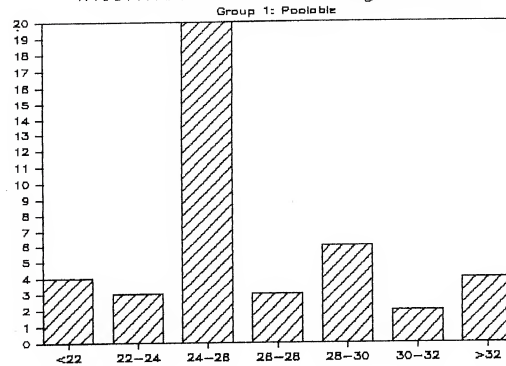
Intermediate FE Colleges: ACS



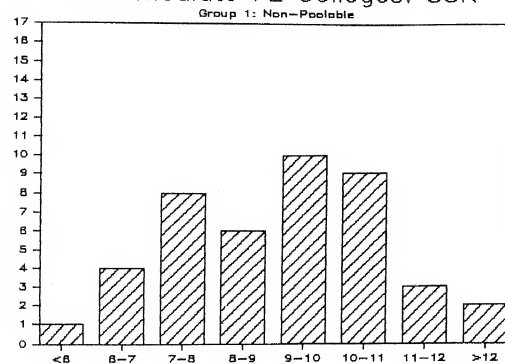
Intermediate FE Colleges: ALH



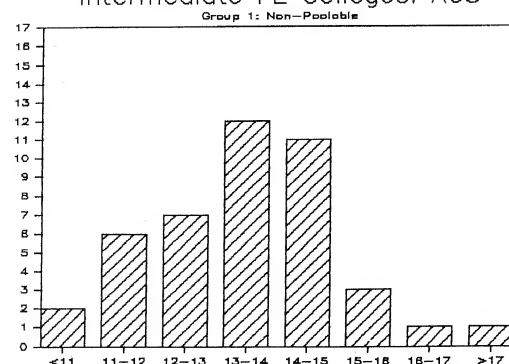
Intermediate FE Colleges: ASH



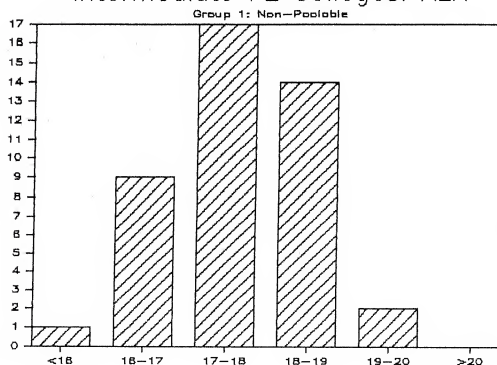
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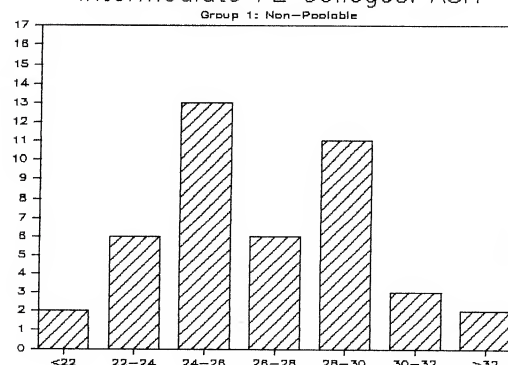
Intermediate FE Colleges: ACS



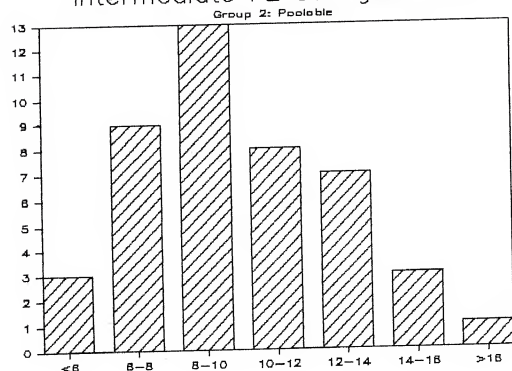
Intermediate FE Colleges: ALH



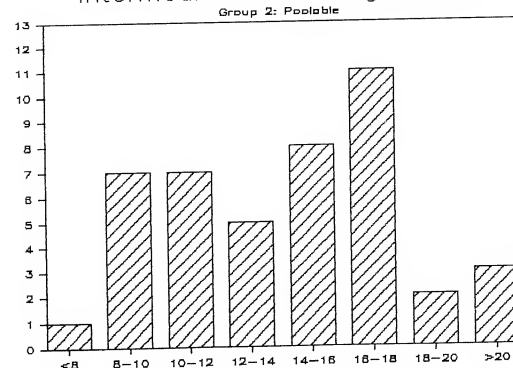
Intermediate FE Colleges: ASH



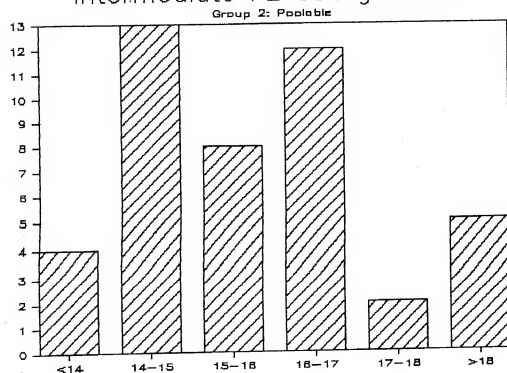
Intermediate FE Colleges: SSR



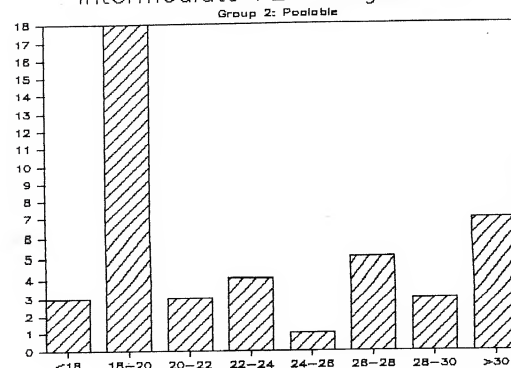
Intermediate FE Colleges: ACS



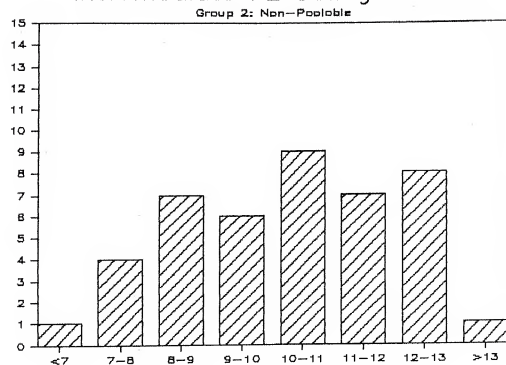
Intermediate FE Colleges: ALH



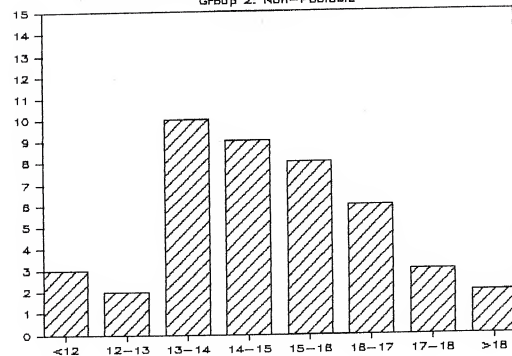
Intermediate FE Colleges: ASH



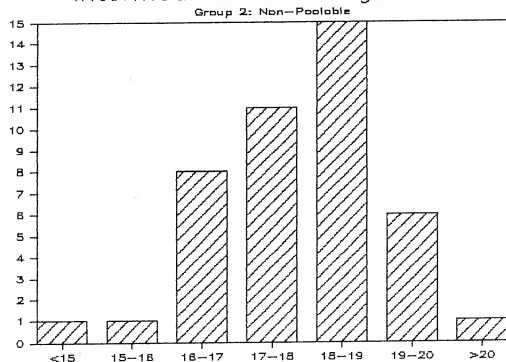
Intermediate FE Colleges: SSR



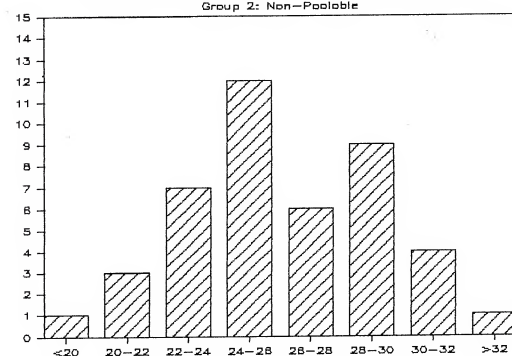
Intermediate FE Colleges: ACS



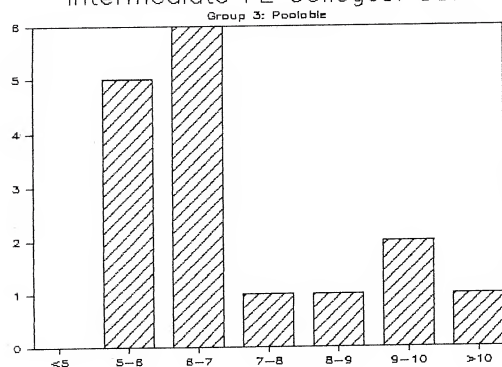
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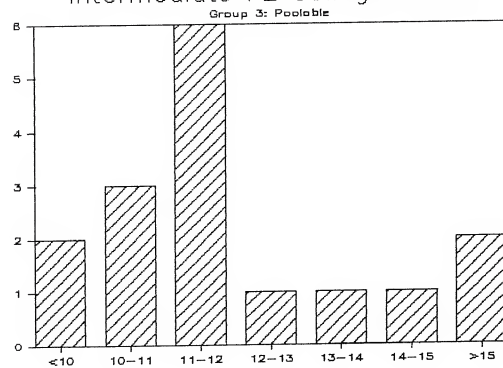
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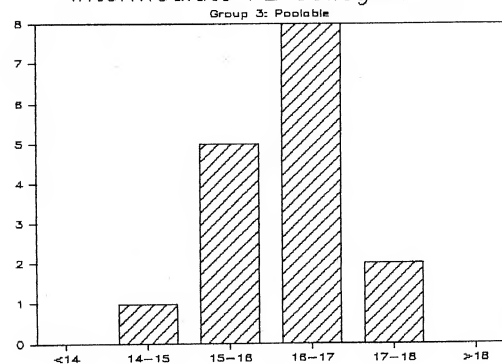
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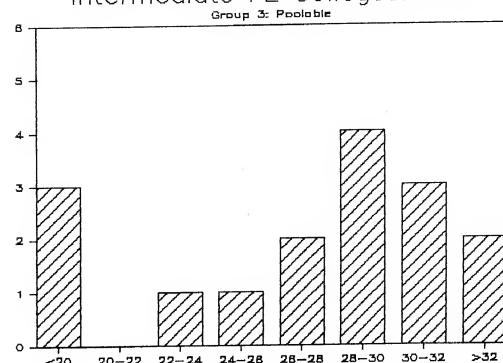
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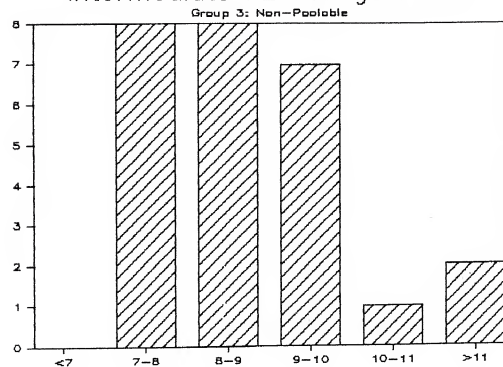
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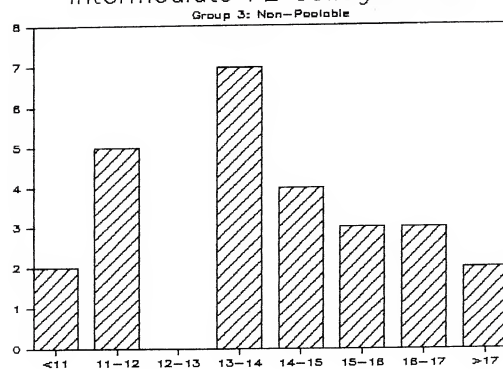
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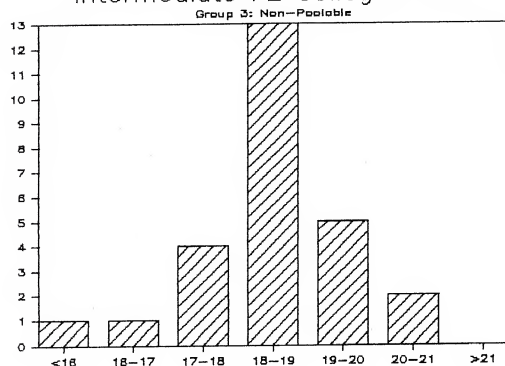
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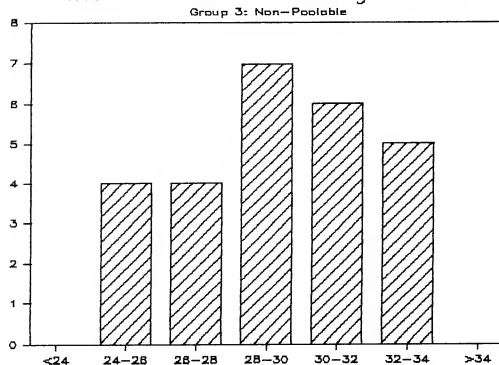
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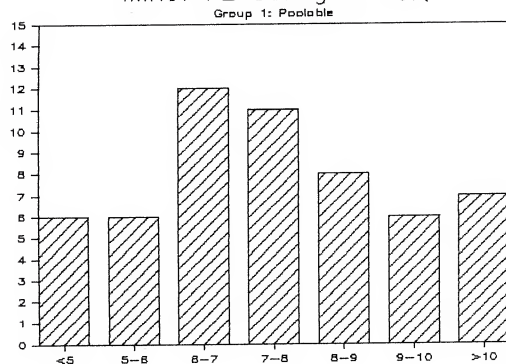
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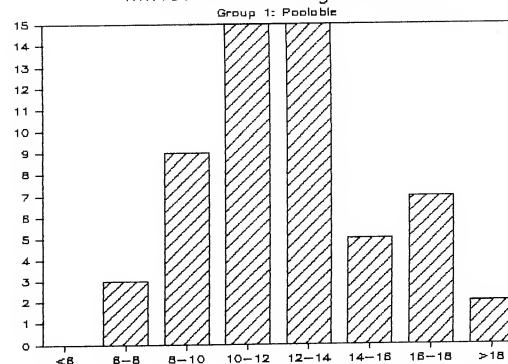
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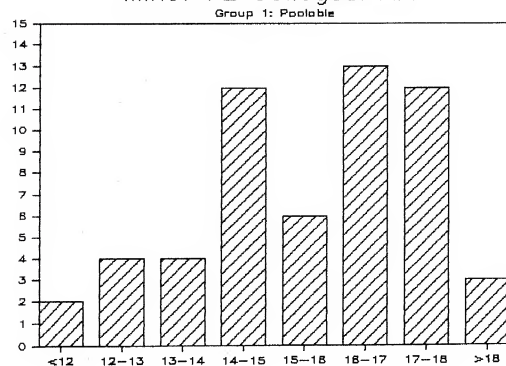
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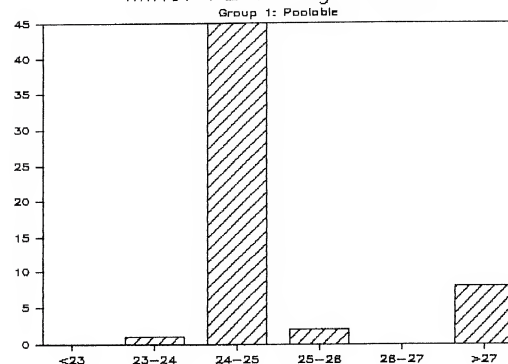
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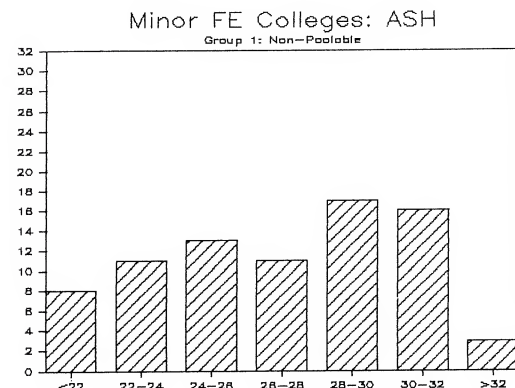
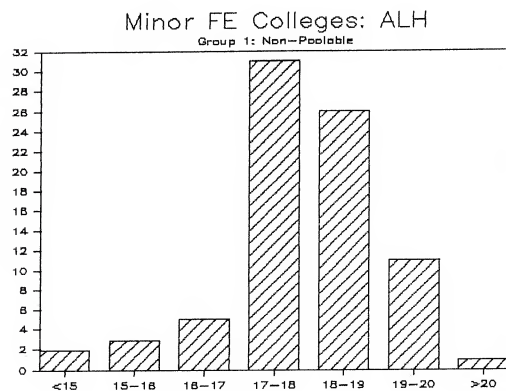
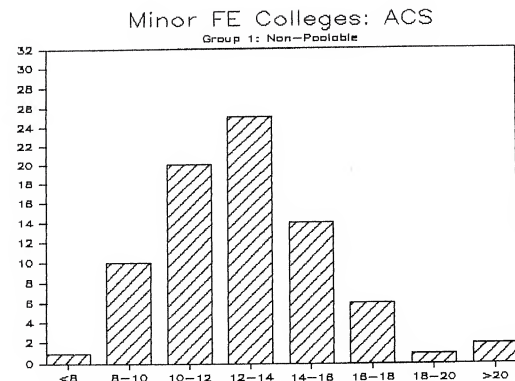
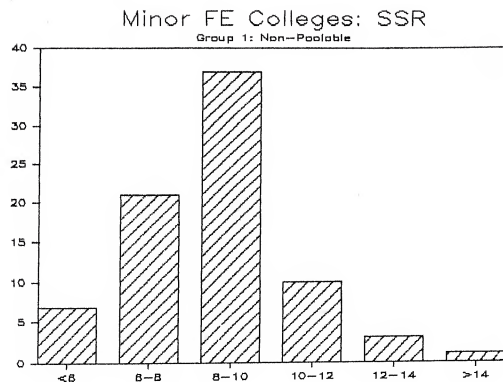


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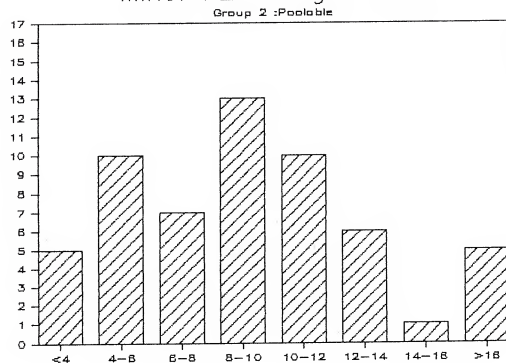


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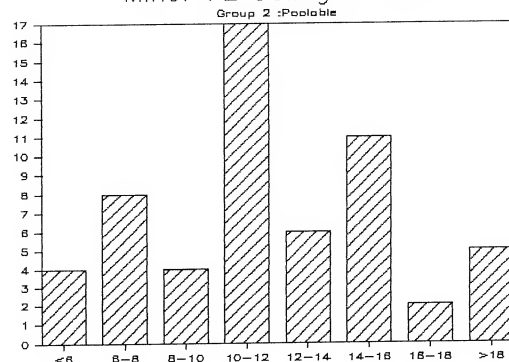




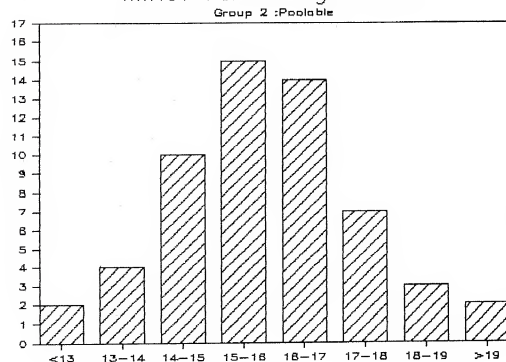
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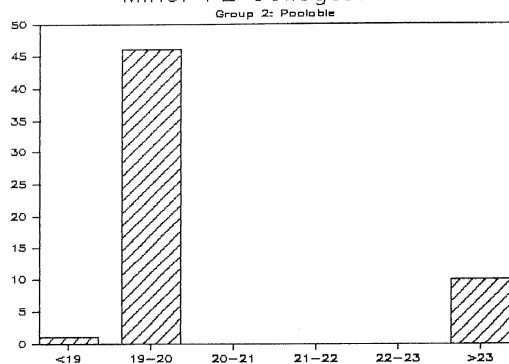
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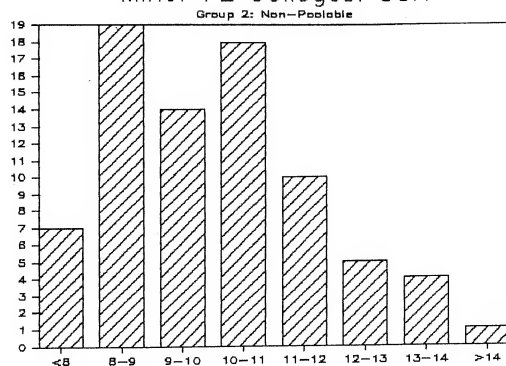
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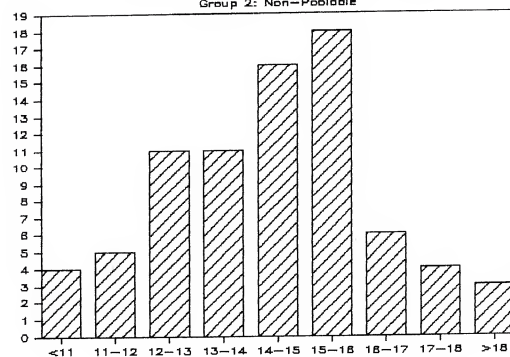
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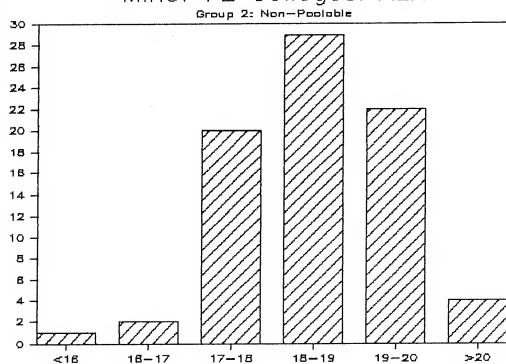
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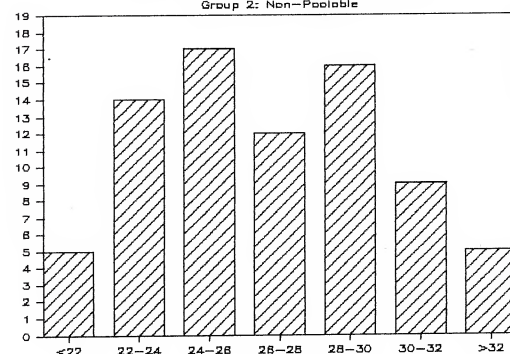
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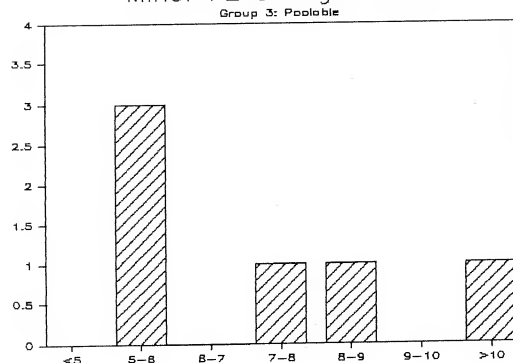
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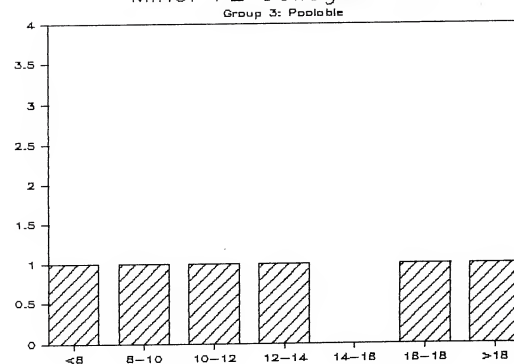
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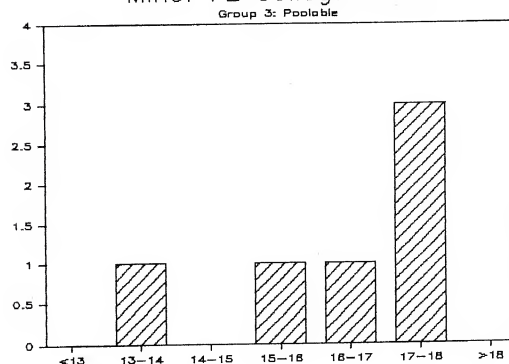
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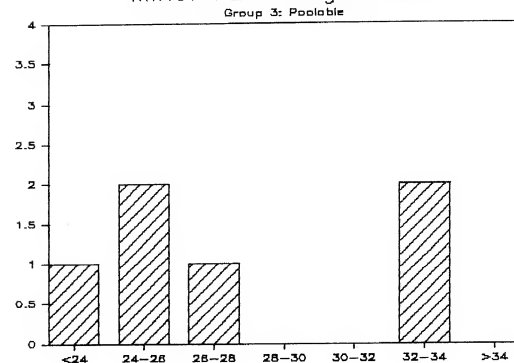
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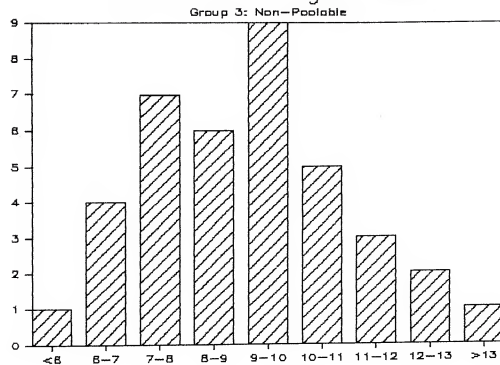
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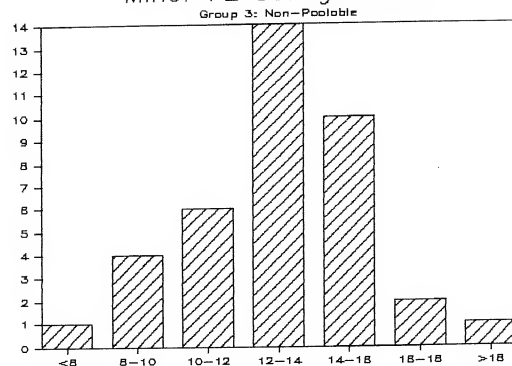
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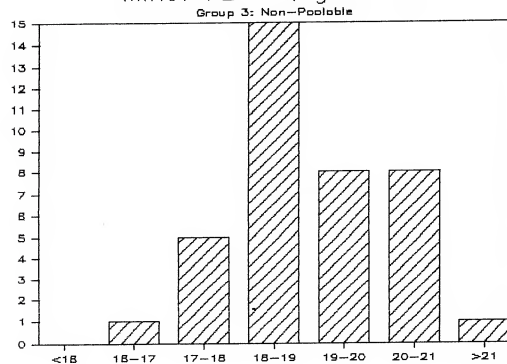
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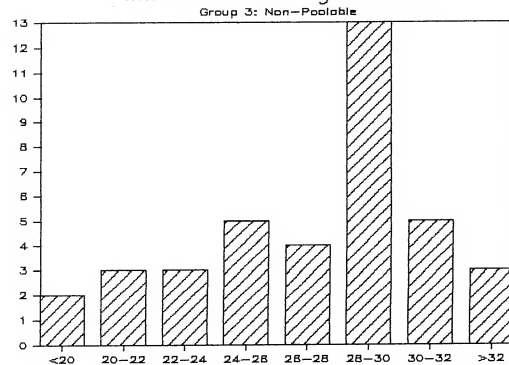
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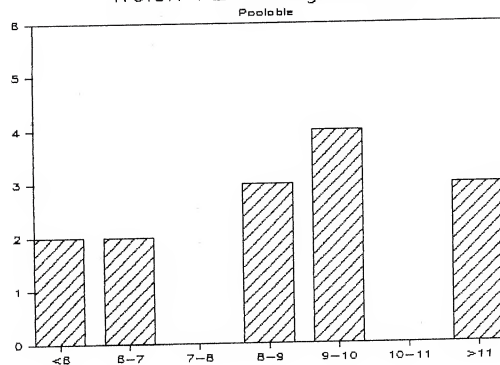
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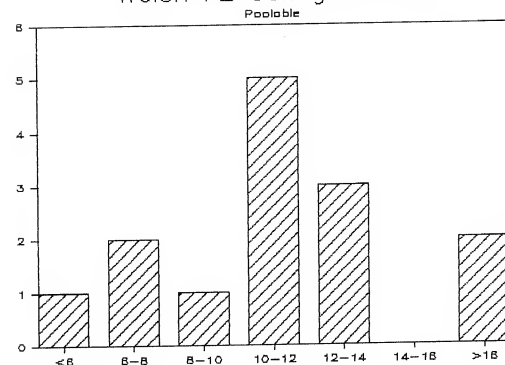
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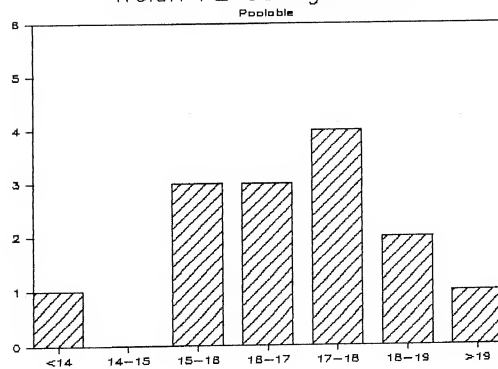
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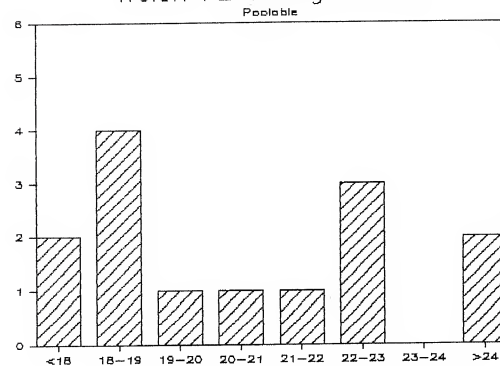
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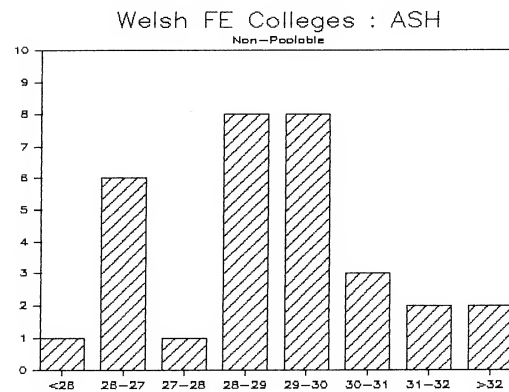
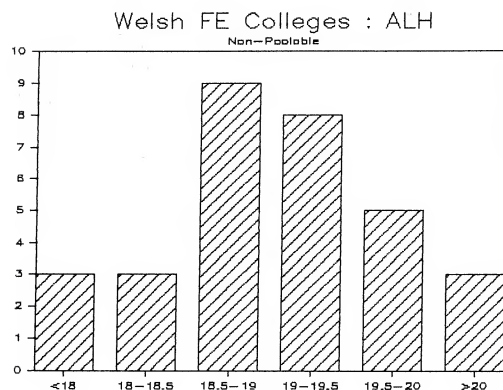
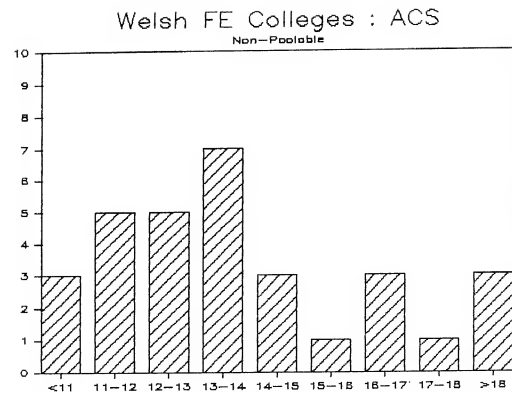
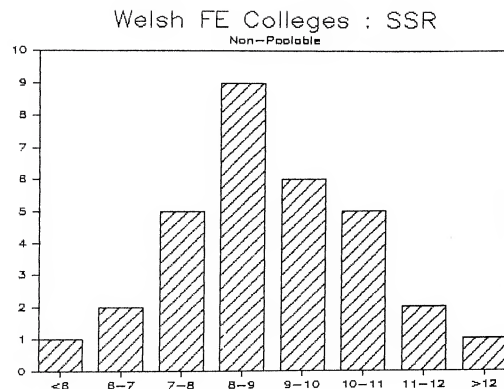


Welsh FE Colleges: ALH



Welsh FE Colleges: ASH





IMPROVING EFFICIENCY IN FURTHER EDUCATION AT WIRRAL METROPOLITAN BOROUGH COUNCIL:

A CASE STUDY

1. Wirral MBC was created in 1974 from two former county boroughs (Birkenhead and Wallasey) and part of the County of Cheshire. The new Borough inherited three colleges and two small schools of art, each with its own traditions and working practices. By 1979, following a series of ad hoc amalgamations, the Authority maintained a large technical college (mid-Group VII), a Group VI college and a small College of Art and Design and Adult Studies. Whilst all three had grown with rising rolls and had acquired staff and premises, resource allocation procedures were not consistent and were often college-led – i.e. there was little LEA influence over courses or the way lecturers were deployed.

2. The colleges provided primarily non-advanced courses related mainly to local employment need together with some school-link courses, general and non-vocational adult education. There was some rivalry between the institutions which was exacerbated by the problems stemming from the stop-go policies of the mid and late 1970s.

3. In 1979, officers of the Wirral Education Department began a management review of the authority's further education service. The momentum and structure of the review were enhanced by Wirral's participation in the pilot studies into resource use in further education undertaken by the Audit Inspectorate a year or so later. This case study outlines aspects of the review process and its results. It covers a five year period of financial contraction, change in management strategies, trial and error in the use of review techniques and the establishment of a data base in support of decision taking. This appendix first describes the background and then the current (1984) position.

BACKGROUND

4. As the Audit Inspectorate review coincided with and partly overlapped the in-house studies being undertaken by education officers, it would be difficult to disentangle the two sets of results. They are, therefore, taken together here to provide an insight into the situation in the colleges in 1979–80. The Audit Inspectorate study adopted the Pooling Committee's approach to the calculation of student/staff ratios and their three constituent measures, together with consideration of non-teaching staff levels, student attendance and retention rates and the more general issues of marketing and curriculum development. LEA officers had also been discussing these subjects with college managers, and in addition were looking at inter-authority recoupment, economic fee courses, examination results and accommodation utilisation. Underlying both studies was the need to explore the efficient generation of management information, ways of testing its reliability and validity and the clarification of roles and decision-making procedures.

5. The introduction of statistical measures relating to aspects of efficiency posed a range of methodological and other problems. Traditionally, colleges had not marshalled data in forms which were readily verifiable; and the initial studies had to operate on "best evidence", accepting high levels of tolerance as to accuracy in some areas. For example, whilst the Chief Administrative Officer in one college had instigated a review of attendance patterns and class sizes in the first week of each calendar month this was not the case in the other two colleges. There

was no inventory of accommodation held by any of the colleges. Teaching timetable checks varied between colleges; but none attempted to monitor the pattern over the term, let alone the whole academic year. Teaching and non-teaching staff levels seemed to relate more to accident than design. In response to requests by the teachers' unions the colleges revealed that their approaches to establishment calculations varied; and the LEA response to the Governors' annual resolutions was, to their eyes, even more ad hoc.

6. The combined studies of the Audit Inspectorate and the Authority's officers produced the following measures of efficiency which in spite of the evidence as to the lack of rigour and reliability of the data base were only disputed by one college in respect of one measure, that of student attendance rates:

Table B-1: THE SITUATION IN 1979-80

	College A	College B	College C
Burnham Group	Top VI	Mid VII	III/IV
FTE Students	2720	2905	440
FT Staff	230	302	47
Student Staff Ratio	6.4:1	6.4:1	6.5:1
Average Class Size	12.5	14.7	12.0
Average Student Hours	32.5	32.4	32.5
Average Lecturer Hours	16.6	14.2	17.5
Remission	1.0%	9.3%	2.0%
Light Timetabling	7.4%	4.5%	2.6%
Attendance Rates	90 %	63 %	86 %
Technicians	37	94	2
Administration Staff	20	28	7
Buildings (£)	1	5	8

In terms of academic level of work and curriculum change the two major colleges shared substantial areas in common, these again being reflected in part in the smallest of the colleges.

7. The aggregate findings for the colleges provided only limited indications of the diversity of practice. Whilst, for example, the overall student/staff ratios were all close to a single (low) level of performance, their constituent performance indicators showed clear differences in class sizes and timetable control. The latter was further exemplified by the variations in college statements of the then recently negotiated remission levels; these in turn were put in context by the findings relating to light timetabling. The value of a Pooling Committee approach based on planned timetable events rather than the simple equation of numbers of staff on the payroll and students on enrolment cards was clear: it identified the results of a range of key college decisions relating to the planned use of resources. It did not [and does not], however, compare inputs and outcomes.

8. The differences were not limited to this key area, as the student attendance rates and the non-teaching staff levels also demonstrated. The former ranged from the highest to the lowest levels in the 1980 national sample and gave rise to considerable debate. The latter highlighted one of the incongruities brought out when objective analysis was compared with subjective judgements: the college which was arguing most vociferously for more support staff already had the lowest student/staff ratio (SSR) and average lecturer hours.

9. Finally, from its formation in 1974 the Authority had operated a standard policy with regard to the management and distribution of resources. In essence two negotiating forums operated, one formal with the trade unions on matters of conditions of service; the other, less cohesively, operated with the individual colleges.

10. In 1979 the policy of distributing increases or decreases in budgets broadly on the basis of teaching staff numbers ceased; and the Education Committee adopted a policy of positive discrimination. Inheritance and historical accident ceased to be prime guidance for changes in resource management and the LEA and Audit Inspectorate studies of the following year were combined to inform decision-taking. Whilst strategies have been concerned with the demands of each individual year, the strengthening of the data base and the development of new management skills has supported a shift from unsystematic incremental budgeting towards a more strategic, longer-term approach.

11. The five year period since the original surveys has been one of significant change with the Borough Council seeking substantial economies, rises in youth unemployment, loss of traditional areas of recruitment, and loss of income from the Manpower Services Commission. In resource terms there has been an unprecedented reduction of the net budget, even before the impact is felt of falling secondary school rolls which are expected to affect future recruitment levels.

12. Each year management reviews served to strengthen both the management information base and the associated decision-making processes. The outcomes have been the transfer of resources to new initiatives, reductions in cost and a higher level of service. In short, better value for money. Table B-2 below summarizes the situation as it was last year in the same three colleges and compares it with the position four years earlier.

Table B-2: PROGRESS ON KEY INDICATORS

Indicators	1979-80	1983-84
FTE Students	6065	6250
FT Staff	579	465
Student Staff Ratio	6.4:1	9.9:1
Average Class Size	13.1	15.5
Average Student Hours/Week	32.5	27.5
Average Lecturer Hours/Week	16.0	17.5
Remission	3.8%	1 %
Light Timetabling	5.5%	1 %
Attendance Rates	73 %	80 %
Small Classes	20 %	c 10 %
Technicians	133	82
Administration Staff	55	45
Buildings	14	4
Timetable Losses	—£441,200	—£60,000
College Income	£1.385 m	£2.418 m

13. The five year period has seen the climb to the peak of the bulge in the key age group for recruitment, together with a rise in the Age Participation Index. These have led to an increase in FTE student numbers. The reduction in full-time teaching staff levels has been offset by reorganisation and tighter manpower planning at college level, together with renegotiation of such aspects of conditions of service as remission levels. In November 1983 prices, the loss due to light timetabling was reduced from over £400,000 to £60,000. Renegotiation and tighter redeployment of staff has not been limited to teaching staff; it has also been explored with technicians, administrative, refectory, caretaking and cleaning staff to improve the level of service whilst reducing costs. At the same time income from external sources has almost doubled, though it has to be recognised that there have been reductions in RSG and recoupment.

14. Efficiency is reflected in the student/staff ratio, which is expected to improve further in 1984-85. Reference has been made to timetable control; this is being strengthened now by feedback from computer analysis of timetables. Class size controls and averaging are being used as register-based data is being analysed to identify retention/drop-out rates; and college-based decisions have been taken to reduce full-time courses to 25 class hours per week. Whilst consideration has been given each year to the key areas of the Burnham proportions of promoted posts and the weekly class contact hours, the LEA still maintains the mid-point for the first and the lowest level for the second.

15. The net estimates of expenditure for college-based provision have been reviewed annually. Losses such as those arising from the capping of the AFE Pool, the subsidy for YTS Mode A fees and the loss of recoupment have been carried through to the college budgets. The rise in income from full-cost fees has been reflected in the setting of targets. More students are being taught; income has increased; staff and facilities are being deployed more productively. There has also been some small rise in examination pass rates and an improvement in attendance levels.

16. Some important changes however are not directly amenable to measurement, though some action research is in hand. Working relationships, the way difficult decisions about courses and deployment of staff are made and the local credibility of the further education service all appear to have benefited from the new management approach.

GUIDE TO AUDITING POLYTECHNIC COSTS

1. This audit guide was drafted to help auditors review the unit costs of polytechnics. During the course of the reviews the guide was developed and amended as necessary. It was originally published in March 1983 as Appendix 13 to an Audit Inspectorate report, *Education: Polytechnic Expenditure*. It is reproduced here for the convenience of LEAs and principals of colleges, since the general approach is applicable in colleges of further education as well.

The individual sections of the guide should not be treated as exhaustive. They were designed to give an auditor who is not experienced in the field of higher education an indication of the level of questions which should be posed. Where appropriate the officer to whom the questions should be directed has been indicated.

2. Certain sections contain questions which are of necessity general due to the lack of uniformity of systems amongst polytechnics. No two polytechnics organise their management structure in the same way and accordingly the guide seeks to be flexible in its approach. Statistical information is not requested in a number of areas due to the fact that few institutions maintain easily comparable data at present. More emphasis is placed upon ascertaining the degree of reliance with which polytechnic produced information can be treated.

3. The sections of the guide are not reproduced in any priority order. It is the task of the auditor faced with a limited timescale to select the areas for review which will yield the most benefit. The following sections are included in the guide:

- (i) Personnel management.
- (ii) Finance.
- (iii) Buildings maintenance.
- (iv) Buildings utilisation.
- (v) Heads of department/schools.
- (vi) Libraries and learning resources.
- (vii) Catering.
- (viii) Hostels.
- (iv) Multi-site operations.
- (x) Computer.
- (xi) Research.
- (xii) Consultancy.

PERSONNEL MANAGEMENT

4. Individual polytechnics place different degrees of emphasis on the importance of the personnel management function. Arrangements may be reviewed where a separate personnel department exists within a polytechnic which deals with all personnel matters. In other institutions it will be found that one or two members of staff act as liaison officers between the polytechnic management, polytechnic staff and the employing local authority. This guide is aimed at the members of staff who exercise the largest degree of control over the personnel function.

- (a) What is the establishment of the personnel department? If no separate department exists what is the FTE number of staff who deal with personnel management?
- (b) What are the duties and responsibilities of staff involved in the personnel function?
- (c) What is the relationship between the personnel staff employed at the polytechnic with the local authority's personnel department?

- (d) Obtain organisation charts for all polytechnic activities.
- (e) Obtain staffing lists/establishment details for all polytechnic activities. If possible identify individual functional areas.
- (f) Obtain any information available on age and/or grading profiles.
- (g) Ascertain whether or not staff of the personnel section have any responsibility for manpower budgeting or monitoring. If staff are involved in these activities what form does this involvement take? What are the reporting dates and procedures to management in respect of these activities?
- (h) Obtain any information on local authority manpower policies which affect the polytechnic, e.g. early retirement, no compulsory redundancies, redeployment of staff etc.
- (j) Obtain financial details of early retirements under the Crombie or other compensation scheme.
- (k) Obtain any details of local conditions of service adopted by the local authority and polytechnic in preference to nationally negotiated conditions. Particular attention should be paid to hours worked per week, class contact hours, gradings and holiday entitlements.
- (l) Ascertain whether or not personnel staff are expected to undertake any ad hoc functions such as O & M, development of procedural manuals, health and safety at work, industrial relations etc.

FINANCE

5. The strength of the finance division of a polytechnic is likely to affect the degree of financial control exercised throughout the institution. Although no absolute indication can be given, in terms of numbers of staff, the degree to which the division is self supporting can be used as a basic guide. The term self supporting refers to the level of budgeting, monitoring and final accounts work undertaken by the division on behalf of the local authority's accountancy and/or budgeting sections.

6. This guide is aimed at the senior finance officer within a polytechnic and is an attempt to determine the degree of control exercised in various activities.

- (a) What is the establishment of the section?
- (b) What are the duties and functions of staff in the section?
- (c) To what degree is the division involved in formulating the annual budget? How much of this is acceptable to the local authority finance department?
- (d) How is the budget allocated to budget holders?
- (e) Detail the purchasing system from the ordering stage through to the certification of invoices for payment.
- (f) Does a system of commitment accounting operate within the polytechnic?
- (g) How and when is information on committed expenditure and actual expenditure issued to departments?
- (h) Does the division contribute to the Polytechnic Finance Officers Group (PFOG) financial surveys? If so obtain working papers for recent years returns.
- (j) Is the division involved in SSR calculations? If so to what extent?
- (k) What is the policy of the polytechnic in respect of the operation of its catering function? Does the service break even?
- (l) What is the policy of the polytechnic in respect of the operation of its hostels function? Does the service break even?
- (m) How often are charges reviewed for hostels and catering?
- (n) Obtain accounts for the last two years for hostels and catering functions.

- (o) Does the polytechnic obtain any income from letting facilities to outside bodies either within or outside term time? If so in what areas and how much income is generated?
- (p) What input, if any, does the division have to the DES "Spring Survey" and pooling returns?
- (q) What is the extent of recharges:
 - from the polytechnic to the local authority?
 - from the local authority to the polytechnic?
 What is the justification for these recharges? How often are they reviewed? Does any negotiation take place over the level of recharges?
- (r) How far towards meeting the criteria established in the CIPFA Manual of Guidance have the accounting systems of the polytechnic been developed?
- (s) If the systems do not meet the requirements of the CIPFA manual what improvements need to be made to achieve this position?
- (t) Has any evaluation been attempted by the division on the incremental cost of operating a multi-site institution? If so what did this show? Obtain copies of working papers and reports.
- (u) What is the reporting structure on financial issues from the finance officer through to approval by the funding authority?

BUILDINGS MAINTENANCE

7. Although this is likely to be a relatively small area of expenditure in many institutions, significant variations may be seen from year to year reflecting major repairs costs. This guide is aimed at the officer within a polytechnic who is designated to be responsible for the building maintenance budget and staff:

- (a) What is the establishment of the building maintenance section both in terms of salaried staff and manual workers?
- (b) Does the polytechnic use its own workforce, private contractors or the local authorities DLO to undertake maintenance work? On what basis is the method used selected?
- (c) How is the maintenance programme formulated? Is it a cyclical programme or are repairs carried out as necessary? Who determines priorities of work?
- (d) How is the budget prepared for buildings maintenance? Does it reflect needs and priorities or is it an incremental budget with inflation being added to a pre-determined base estimate?
- (e) How far does the present budget allocation meet the maintenance needs of the polytechnic?
- (f) Are there any age or historical problems relating to the polytechnics buildings?
- (g) Have there been any peculiar or particular problems with buildings in recent years, e.g. structural failure, high alumina cement, blue asbestos, etc? If so obtain details and amounts where available.
- (h) What is the reporting procedure from the buildings maintenance officer both within the polytechnic and to the local authority?
- (j) What is the cost of maintenance per square metre of building maintained?
 - How does this compare with:
 - other colleges in the authority?
 - other polytechnics?

BUILDINGS UTILISATION

8. Information on the utilisation of buildings will differ from institution to institution. In some cases the only information will be which student groups use the buildings whereas others will be able to detail the use of each

room at any time during the day. Equally, the information held on the size of buildings and their floor areas will vary. A number of institutions are known to have very little current information in this field. This guide is aimed at officers responsible for the physical resources of a polytechnic:

- (a) Is any information available about the size of buildings in terms of floor areas?
- (b) How accurate is this information? When was it last up-dated? Obtain figures in as much detail as possible.
- (c) What monitoring of usage takes place? How is this undertaken, manually or by computer?
- (d) Has any comparison been undertaken with DES established norms for space per student? If so what did this show?

HEADS OF DEPARTMENTS/ SCHOOLS

9. It is usually found that a head of school is the individual responsible for the largest single part of polytechnic expenditure, the academic staff. Although it will be impossible to interview all heads of departments without undertaking an extensive review, a representative sample should be attempted, i.e. at least one Group One department, one Group Two and one from Art and Design. In addition to the control of academic staff, it will often be found that heads of department control the following activities:

- other expenditure within the department
- research policy
- consultancy policy
- budget preparation and control
- capital bids, allocations and control
- support staffing levels
- remission of teaching duties

10. This guide is aimed at heads of departments (not deans of faculty unless they are responsible for the areas detailed above) and is designed to indicate the degree of control exercised over polytechnic resources at the 'operational' level:

- (a) Obtain details of the size of the department in terms of FTE teaching and support staff.
- (b) Obtain the comments of the head of department as to his opinion of the adequacy of staffing levels in terms of volume and mix of staff available. Is the mix felt to be correct? How does this compare with other departments in the institution?
- (c) What is the departmental SSR? Obtain details of FTE students.
- (d) What level of part-time or sessional lecturers is utilised by the department?
- (e) How is control exercised over teaching staff? Do timetables exist? If so how and how often are they compiled? Who compiles them? Are copies retained centrally? If so obtain copies for last academic year and terms to date.
- (f) Determine the policy of the department towards remission of teaching duties. Particularly note research, research supervision and administration.
- (g) What input does the head of department have into formulating the budget? Is the budget felt to be adequate? If not what areas need revision? To what extent?
- (h) How is budgetary control exercised?
- (j) What information is received from the finance division on commitments and actual expenditure? How often is this information received? Is it felt to be adequate? Does the department operate any internal systems? Are these manual or computerised?
- (k) Does the department adhere to any local authority or polytechnic

negotiated contracts? If not obtain justification.

- (l) How many research projects are ongoing in the department? Are these internally or externally funded? Obtain details of the system and procedures in operation for a project from the point at which a member of staff proposes a project through to the publication of results.
- (m) How many staff are currently employed on research projects? What are their designations? What is the value of ongoing projects?
- (n) Ascertain the department's attitude to consultancy work. How many staff are active in this field? What level of income is generated on behalf of the polytechnic? Does the head of department feel that this is representative of the level of work which he believes is ongoing? (See section on Consultancy).
- (o) Does the department suffer any problems because of multi-site operation? If so obtain details and costs where available.
- (p) Is the level of capitalisation in the department felt to be adequate? Did the department benefit in resource terms from any merger with colleges of FE or teacher training institutions? If so obtain details.
- (q) Have there been any CNAAs reports regarding the department in recent years? If so what were the main points of the reports? Obtain copies where available.
- (r) How much teaching staff time is spent on what is either administrative or technician-level work?

LIBRARIES AND LEARNING RESOURCES

11. The degree of sophistication of the learning resources arrangements within polytechnics varies from the traditional library through to video and computer based learning systems. Expenditure by such a section will therefore obviously reflect the level of service offered as well as the efficiency with which that service is provided. This guide is aimed at heads of learning resources units and is designed to determine the level of service provided and the control exercised over expensive assets.

- (a) What is the establishment of the department? How many staff are paid on Burnham grades? What is the justification for this?
- (b) What is the budget of the department? Is this felt to be adequate? If not indicate the areas which are badly provided.
- (c) How is budgetary control exercised? What information is received from the finance officer? Is this felt to be adequate? If not, what improvements are felt to be necessary?
- (d) What services are provided by the department?
- (e) What is the degree of mechanisation in the department? Particularly note the video, computer and general media resources functions. What security systems and inventory controls exist?
- (f) Does multi-site operation cause any organisational or other problems? If so obtain details and costs where available. Particularly note the duplication of provision in terms of both staff and assets and the movement of staff between sites.
- (g) What are the opening hours of the facilities on individual sites? Are these felt to be adequate or do they reflect an over or under provision?
- (h) Are the facilities available for use by members of the public or other bodies? If so are any charges made? Obtain details if appropriate.
- (j) Are any specialised facilities under the control of learning resources, available for use by staff or students e.g. TV recording studios etc? If so obtain details and costs.
- (k) What control is exercised and what checks are carried out to ensure that stocks of books and equipment are safeguarded and accounted

for within the department? How often are checks carried out? When was the last check? What did it reveal?

- (l) Obtain details of purchasing policies for books and equipment. What is the basis for selection of suppliers?
- (m) Are any usage statistics available? If so obtain details for a number of periods.
- (n) Is any income generated from the sale of catalogues, photocopying etc? If so obtain details of activities and amounts of income.

CATERING

12. There are various DES circulars relating to the catering function in colleges of higher and further education and polytechnics. Guidelines to take effect from September 1981 were agreed between DES and CLEA. Subsequent charges for residences and catering were specified in CLEA circular 80/10. This was revised in circular 80/40 which was dated 25 September 1980. Basically these circulars state that with the exception of various poolable costs (debt charges, rates etc) a catering function should break even each financial year.

13. Various factors will affect the ability and desire of an institution to see that its catering function breaks even. This guide is aimed at the catering officer and attempts to determine the past and anticipated future performance of the catering function and to identify factors which prevent the service from breaking even.

- (a) What is the establishment of the department? Obtain details of both salaried and weekly paid employees.
- (b) On how many sites does the catering function operate? Obtain details of opening hours.
- (c) Is management information available for each site in the form of meals served and costs incurred? If so obtain details for at least two years.
- (d) Identify the past, current and future position of the catering service in terms of breaking even.
- (e) Has any action been taken, or is any anticipated, to improve the ability of the service to break even e.g. rationalisation, redundancies, pricing policies, preparation policies, marketing policies etc?
- (f) Do local or national conditions of service relating to vocational retainer payments have any effect on the cost of the service? If so quantify this effect.
- (g) Does the service operate on any hostel sites? If so what criteria are used to assess the apportionment of the fee between the hostel and catering accounts? Is this felt to be satisfactory? If not in what way could the apportionment be improved or what other methods of accruing income could be used?
- (h) What purchasing methods are used by the catering officer? Who selects and on what basis are suppliers engaged to service the catering activity?
- (j) What monitoring of income/meals served takes place? To whom are reports made?
- (k) Does any liaison occur between the polytechnic catering officer and any other local authority catering managers? If so on what basis?
- (l) Are any difficulties caused to the catering function because of lack of capital provision? If so obtain details. Is equipment felt to be adequate? Will there be any replacement problems in the future?

HOSTELS

14. The size, quality and extent of hostel provision will vary between institutions. Similarly to the catering function, hostel accounts should be maintained as trading accounts separate from the main polytechnic

accounts. The provisions of CLEA circulars 80/10 and 80/40 respectively published in February and September of 1980 apply to hostels in addition to catering. This means that polytechnics should strive to make their hostels income match expenditure with the exception of poolable items.

15. This guide is aimed at the member of staff with overall responsibility for hostels management and seeks to establish the size of the provision, the past, present and expected future position and determine any particular problems facing the service.

- (a) How many hostel places are available for use? Where are these situated? What levels of occupancy are experienced?
- (b) What type of accommodation is offered i.e. catering or self-catering?
- (c) What forms of management information or accounts are available? Obtain copies for recent periods.
- (d) What charging policies operate? How often are charges reviewed? What was the date and effect of the last review?
- (e) What is the staffing establishment of the hostels function? Distinguish between salaried and weekly paid employees. Obtain grades of staff.
- (f) Do any local or national conditions of service exist which influence the attempts to break even? If so obtain details.
- (g) What action has been taken in recent years to attempt to break even e.g. deletion of vacation retainer payments? What activity has taken place to encourage vacation lettings?
- (h) Are existing resources felt to be adequate? If not obtain details of shortcomings in provision.
- (j) Is the capital allocation felt to be adequate? If not obtain details of shortcomings. Are any problems foreseen in the future as a result of obsolete or ineffective equipment or buildings requiring maintenance or replacement?

MULTI-SITE OPERATION

16. Reference to the costs incurred and difficulties experienced because of multi-site operation are referred to in various other parts of the audit guide. The intention of the questions is to attempt to quantify the effects of split site operations. It is likely that no single person will have all the information required on multi-site operations but the aim of this guide is to consolidate the points which should be considered in attempting any evaluation.

- (a) How many individual sites are utilised by the institution? Roughly, what is the student population of each site? Are they felt to be over or under utilised?
- (b) Obtain comments and any available information on the age and quality of the building stock available.
- (c) Does any facility exist in the accounting system for individual site costing? If so obtain details for at least two years.
- (d) Identify any duplication of cost as a result of multi-site operation e.g. receptionists, telephonists, library staff and book provisions etc.
- (e) Identify any costs which have been directly created by multi-site operation e.g. bussing of students, cost of land lines and telephone links etc.
- (f) Is there available space or resources to enable centralisation? If so are there any plans to centralise or rationalise the number of sites?
- (g) Has any exercise been undertaken by the polytechnic in recent years in an attempt to identify the costs of multi-site operation? If so what were the results? To whom were they reported? Obtain a copy of the report.

- (h) Are there any other reasons for operating a multiple site activity e.g. to maintain a presence in various areas of the Authority?
- (j) Obtain details of the historical development of the institution from its inception. This may give a guide to the development of particular sites.
- (k) Identify the cost of staff travel between sites.
- (l) Are sites rented from external bodies? If so, determine why. Are alternative sites available within polytechnic owned areas?

COMPUTERS

17. The number and size of computers and the extent of their application will obviously vary between institutions. However, the use of the computer by academic and administrative departments together with any commercial usage may significantly affect the cost of the operation to the polytechnic. This guide is aimed at the computer manager and seeks to ascertain the extent of such applications and assess the degree of sophistication achieved by a polytechnic.

- (a) Establish the type, size and capacity of the machine(s). On what basis, and when, was the machine purchased?
- (b) How many locations are served?
- (c) If more than one computer exists what is the compatibility of the machines?
- (d) Is there any overall computer development strategy? Identify the person or body responsible for controlling the development of the computer within the polytechnic. Obtain a copy of any development plan.
- (e) What is the establishment of the computer division? How many staff are paid on Burnham scales? What is the justification for this?
- (f) Ascertain whether or not the computer manager has any input into the capital and revenue budgets. Are budgets felt to be adequate? If not identify areas with shortcomings.
- (g) What is the policy on maintenance and replacement of equipment?
- (h) How is the budget for the computer division controlled? By whom? What information is received from the finance division? How often is this received? Is this felt to be adequate?
- (j) Identify any overlap of duties between the computer division and:
 - any other polytechnic departments
 - the local authority
- (k) How much administrative work is undertaken by the computer?
- (l) Ascertain the extent of any computerised learning facility in terms of staff employed on systems development and maintenance and the number of terminals and micro-computers used.
- (m) Ascertain the extent of any usage of the machine by outside bodies and establish the income generated on behalf of the institution. Is there any surplus capacity or are any plans in existence which will increase this?

RESEARCH

18. In addition to this guide, reference is made to research in the section dealing with heads of department. Research can be split into two categories, internally and externally funded projects. The degree to which projects are controlled will depend largely on the attitude of the polytechnic concerned. This guide is aimed at the member of the academic or administrative staff who is considered by other members of the polytechnic to be in control of the research activity.

- (a) Identify the person or body responsible for the control of research.
- (b) Identify the quantity of internally and externally funded research which has been undertaken in the last two years.

- (c) Ascertain whether or not the polytechnic has a policy of remission of class contact hours in respect of either time spent on research projects or their supervision.
- (d) How many research posts are available within the polytechnic? Obtain details of the internal or external funding of each post.
- (e) Establish the level of secretarial and technical support which is afforded to research.
- (f) Enquire as to the system of control for a project from the initial proposal through to the publication of a report. (Cross check this with the finance officers' and heads of departments' descriptions of the system.)
- (g) Establish the policy of retention of equipment purchased for research projects and for the project reports.
- (h) Select a representative sample of projects, some ongoing and some completed. Test that the system of control is sound and that income due is promptly collected.
- (j) Establish that adequate processes exist for the cut off procedures to operate on completion of projects.
- (k) Obtain any publications available about research policy and any annual reports on research at the polytechnic.

CONSULTANCY

19. Consultancy is consistently a problem area for polytechnics and institutes of higher education. There are often no clear instructions or guidelines published by the governing bodies or management of institutions which can lead to problems of interpretation of the regulations.

20. It is often argued that to keep abreast of current developments a lecturer needs to be involved with modern practice in the subject in which he is teaching. As an attempt to do this lecturers often undertake private assignments on behalf of outside bodies for which they receive payment. Hence the term consultancy. The problems, from the point of view of polytechnic management and auditors, are ones of ensuring that polytechnic resources are not misappropriated and of preventing any potential third party liabilities from being incurred.

21. As a result of the level of class contact hours required of lecturers together with the way in which timetables are constructed and monitored it is invariably difficult to establish whether a lecturer is working in either the polytechnics or his own time. Until a specified working week is agreed upon the level of control will always be doubtful. This guide is not aimed at any particular member of staff but seeks to establish a check list of points which should be covered as part of a review of this activity:

- (a) Establish whether any central or departmental system of control exists in respect of consultancy. Obtain details of whatever systems exist.
- (b) If polytechnic resources are identified as being used for consultancy projects does the polytechnic obtain any recompense? On what basis is the finance division involved in determining the adequacy of income received?
- (c) Within the polytechnic what happens to any income received from consultancy projects? Establish the amount of income generated by the polytechnic in the last two years for consultancy projects.
- (d) Have any companies been established by combinations of polytechnic staff which may conflict with or encroach upon the interests of the polytechnic?
- (e) Test check a sample of declared consultancy projects through the system.